

**NASA TECHNICAL NOTE**



*N 73 - 30020*  
**NASA TN D-7205**

**NASA TN D-7205**

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**EFFECT OF WING ASPECT RATIO AND FLAP SPAN  
ON AERODYNAMIC CHARACTERISTICS OF  
AN EXTERNALLY BLOWN JET-FLAP STOL MODEL**

*by Charles C. Smith, Jr.*

*Langley Research Center*

*Hampton, Va. 23665*

1. Report No. NASA TN D-7205		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle EFFECT OF WING ASPECT RATIO AND FLAP SPAN ON AERODYNAMIC CHARACTERISTICS OF AN EXTERNALLY BLOWN JET-FLAP STOL MODEL				5. Report Date August 1973	
				6. Performing Organization Code	
7. Author(s) Charles C. Smith, Jr.				8. Performing Organization Report No. L-8752	
9. Performing Organization Name and Address NASA Langley Research Center Hampton, Va. 23665				10. Work Unit No. 760-61-02-01	
				11. Contract or Grant No.	
12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Washington, D.C. 20546				13. Type of Report and Period Covered Technical Note	
				14. Sponsoring Agency Code	
15. Supplementary Notes					
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17. Key Words (Suggested by Author(s))  STOL Jet flap External blowing				18. Distribution Statement  Unclassified - Unlimited	
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		22. Price* \$3.00	
				21. No. of Pages 136	

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ON AERODYNAMIC CHARACTERISTICS OF AN EXTERNALLY  
BLOWN JET-FLAP STOL MODEL

By Charles C. Smith, Jr.  
Langley Research Center

SUMMARY

An investigation has been conducted to determine the effects of flap span and wing aspect ratio on the static longitudinal aerodynamic characteristics and chordwise and spanwise pressure distributions on the wing and trailing-edge flap of a straight-wing STOL model having an externally blown jet flap without vertical and horizontal tail surfaces. The force tests were made over an angle-of-attack range for several thrust coefficients and two flap deflections. The pressure data are presented as tabulated and plotted chordwise pressure-distribution coefficients for angles of attack of  $1^\circ$  and  $16^\circ$ . Pressure-distribution measurements were made at several spanwise stations.

The results of the investigation showed that reducing the flap span or wing aspect ratio adversely affected the aerodynamic characteristics of the model which had four engines located uniformly over the exposed span of the flap. The two-engine configuration with only the two inboard engines operating had about the same longitudinal aerodynamic characteristics as the configuration with all four engines operating. The spanwise lift distribution of an externally blown jet flap is characterized by high peak loads, mainly on the flaps behind each engine. There is a substantial spanwise lift carryover to stations far removed from the jet itself.

INTRODUCTION

The present investigation was a part of a general research program to provide some fundamental information on the effects of geometric changes on the aerodynamic characteristics of an external-flow jet-flap STOL model. A previous part of the program (ref. 1) studied the effects of vertical and longitudinal engine positions, jet-exhaust deflectors, and leading-edge and trailing-edge flap geometry on the aerodynamic characteristics of an externally blown jet-flap (EBF) model. The object of the present part of the program was to determine the effects of flap span and wing aspect ratio on the aerodynamic characteristics of the model. The same basic model has been used in both parts of the program.

This paper presents the effects of wing aspect ratio and flap span on the static longitudinal aerodynamic characteristics and the chordwise and spanwise pressure distribution on the wing and flap of an EBF configuration without vertical or horizontal tail surfaces. The model used in the investigation was powered by four simulated high-bypass-ratio turbofan engines and was equipped with an unswept, untapered wing having a double-slotted trailing-edge flap and a leading-edge slat. The position of the engines along the span of the wing varied to provide uniform spacing over the exposed span of the flaps. The force tests were made over an angle-of-attack range for several thrust coefficients and two flap deflections. The pressure-distribution tests were made for the same flap deflections and thrust coefficients at angles of attack of  $1^\circ$  and  $16^\circ$ .

### SYMBOLS

The data are referred to the stability-axis system with the origin at the moment reference center location (0.40 mean aerodynamic chord). The pressure coefficients are based on free-stream dynamic pressure. Measurements were made in the U.S. Customary Units. They are presented herein in the International System of Units (SI) with the equivalent values in the U.S. Customary Units given parenthetically.

A	wing aspect ratio
b	wing span, m (ft)
$C_D$	drag coefficient, $F_D/qS$
$C_L$	lift coefficient, $F_L/qS$
$\Delta C_L$	incremental lift coefficient due to flap deflection
$C_{L,trim}$	trim lift coefficient, $C_L + \frac{C_m}{l/c}$
$C_{L,\Gamma}$	circulation lift coefficient due to power
$C_m$	pitching-moment coefficient, $M_Y/qSc$
$C_\mu$	gross-thrust coefficient, $T/qS$
c	wing chord, 0.254 m (0.833 ft)

$c_f$	chord of rear element of trailing-edge flap, m (ft)
$c_n$	wing-section normal-force coefficient, $\int_0^1 c_p dx/c$
$c_p$	pressure coefficient, $\frac{p - p_\infty}{q}$
$c_v$	vane chord, m (ft)
$F_A$	net axial force, N (lb)
$F_D$	drag force, N (lb)
$F_L$	lift force, N (lb)
$F_N$	normal force, N (lb)
$F_R$	resultant force, $\sqrt{F_N^2 + F_A^2}$ , N (lb)
$l$	tail length (assumed), m (ft)
$M_Y$	pitching moment, m-N (ft-lb)
$p$	surface static pressure, N/m <sup>2</sup> (lb/ft <sup>2</sup> )
$p_\infty$	free-stream static pressure, N/m <sup>2</sup> (lb/ft <sup>2</sup> )
$q$	free-stream dynamic pressure, N/m <sup>2</sup> (lb/ft <sup>2</sup> )
$S$	wing area, m <sup>2</sup> (ft <sup>2</sup> )
$T$	measured gross engine thrust, N (lb)
$W$	weight
$x$	longitudinal coordinate of airfoil, m (ft)
$y$	lateral distance from center line, measured perpendicular to plane of symmetry, m (ft)

$z$	airfoil surface ordinate, m (ft)
$\alpha$	angle of attack, deg
$\delta_f$	deflection of rear element of trailing-edge flap (positive when trailing edge is down), deg
$\delta_j$	jet turning angle, $\tan^{-1} \frac{F_N}{-F_A}$ , deg
$\delta_v$	deflection of vane from wing chord plane, deg
$\eta$	flap-system turning efficiency, $F_R/T$

#### Subscripts:

$l$	lower
$u$	upper

### MODEL AND APPARATUS

Figure 1 presents a three-view drawing of the model with the aspect-ratio-7 wing and full-span flap. Figure 2 shows the planform arrangement of the wing and engines for  $A = 5.25$  with full-span flap and  $A = 7$  with both full-span and partial-span flaps. Note that in each case the engines were located so as to provide a uniform spacing over the exposed span of the flaps. Dimensional characteristics of the model are given in table I. The aspect-ratio-7, full-span-flap model was the same as that of reference 1, and the vertical and chordwise engine position was the same as position 1 of reference 1 (see fig. 3). A detailed sketch of the wing leading-edge slat and trailing-edge flap assembly is shown in figure 4. An NACA 4415 airfoil was used on the wing. The airfoil sections for the vane and flap of the trailing-edge flap assembly were identical, and their coordinates are presented in table II. Flap deflections  $\delta_f$  of  $35^\circ$  and  $55^\circ$  were obtained by using separate flap brackets for each case. In all tests with flaps deflected,  $\delta_v = \frac{\delta_f}{2}$ .

The engines on the model represented high-bypass-ratio fan-jet engines and compressed-air-driven turbines drove the fans. The basic engine is illustrated in figure 5.

In order to determine the chordwise and spanwise pressure distributions on the wing, pressure orifices were located on the upper and lower surfaces on the left wing and flap at eight spanwise stations. (See figs. 6 and 7.) In tests of the model with

the reduced flap span and/or wing aspect ratio, only six spanwise locations of pressure orifices were used (1 to 6) because stations 7 and 8 were eliminated when the wing tip was altered to obtain these configurations.

The model was sting mounted on a six-component internal strain-gage balance in the 9- by 18-m (30- by 60-ft) test section of the Langley full-scale tunnel.

## TESTS AND PROCEDURES

In preparation for the tests, engine calibrations were made to determine gross thrust as a function of engine rotational speed in the static condition. These calibrations were made with the engines mounted on the wing, bellmouth inlets installed, and trailing-edge flaps removed. The tests were then run by setting the engine rotational speed to give the desired thrust and holding these speeds constant over the angle-of-attack range.

Tests were made at zero airspeed to determine flap turning angles  $\delta_j$  and turning efficiencies  $\eta$  under static conditions. These tests and the wind-on tests were made at  $\delta_f = 35^\circ$  and  $55^\circ$ .

All wind-on force tests were made over an angle-of-attack range from  $-4^\circ$  to  $31^\circ$  at gross-thrust coefficients  $C_{\mu}$  of 0, 2.05, and 4.10 for configurations having a wing aspect ratio of 7 and  $C_{\mu} = 0, 2.75, \text{ and } 5.50$  for a wing aspect ratio of 5.25. These  $C_{\mu}$  values correspond to the same thrust of the engines and differ only by being based on a different wing area. The free-stream dynamic pressure for both the force tests and the pressure-distribution tests was  $166 \text{ N/m}^2$  ( $3.46 \text{ lb/ft}^2$ ) which corresponds to an air-speed of  $16.4 \text{ m/sec}$  ( $54 \text{ ft/sec}$ ). The Reynolds number was  $3.47 \times 10^5$  based on the wing chord.

No wind-tunnel jet-boundary corrections were considered necessary since the model was very small relative to the size of the test section.

## RESULTS AND DISCUSSION

### Static Turning

Since the effectiveness of a jet-flap system is dependent to a large degree upon the capability of the system for turning and spreading the jet exhaust efficiently, static turning tests were made of all configurations included in the present investigation to identify the relative performance of each. Results of these tests (see fig. 8) show there is very little change in the jet turning angle due to changes in the aspect ratio of the wing and/or the flap span. The ratio of the normal force to thrust  $F_N/T$  is plotted as a function of the ratio of net axial force to thrust  $-F_A/T$  in figure 9. These data indicate that the losses caused by turning and spreading of the jet were from 8 to 10 percent for  $\delta_f = 35^\circ$

and from 35 to 40 percent for  $\delta_f = 55^\circ$ . The turning of the jet was better when the trailing-edge flap was deflected  $70^\circ$  rather than  $55^\circ$  because the flap captured more of the jet engine exhaust. However, a trailing-edge-flap deflection of  $55^\circ$  instead of  $70^\circ$  was used in the present investigation because the data of reference 1 indicate that undesirable large negative angles of attack would be associated with flight at  $\delta_f = 70^\circ$ .

#### Wind-On Data

Four engines. - The basic aerodynamic data for the model are presented in figures 10 to 12 for  $\delta_f = 35^\circ$  and figures 13 to 15 for  $\delta_f = 55^\circ$ . These data show that an increase in thrust coefficient caused the usual increase in maximum lift coefficient and nose-down pitching moment.

In order to show more clearly the effects of wing aspect ratio and flap span on the longitudinal aerodynamic characteristics, the data of figures 10 to 15 have been replotted in terms of trim lift coefficient and drag coefficient versus thrust coefficient  $C_\mu$  and presented as figure 16. Comparison of the plots shows that there was little loss in trim lift coefficient with reduction in aspect ratio from 7 to 5.25 but that there is more than twice as much loss in lift from reduction in flap span from full span to 0.75-span for the  $A = 7$  wing. This comparison would suggest that there might be little lift carryover onto the unflapped tip section of the wing. In order to investigate this point the data for the  $A = 5.25$  wing were recomputed based on the area of the  $A = 7$  wing. Comparison of the plots (fig. 16) shows that the unflapped tips added an increment of  $C_L$  of 0.2 to 0.4 (based on the total area of the  $A = 7$  wing). Therefore, based on the area of the tips themselves, they added an increment of  $C_L$  four times as great. On the basis of this gross analysis of lift, it is apparent that the unflapped tips were causing an increment of lift much greater than would normally be attributed to them.

Presented in figure 17 are values of added circulation lift due to power  $C_{L,\Gamma}$  as a function of wing aspect ratio. These data were obtained from reference 2 for the internal-flow jet-flap concept and from the present investigation for the EBF concept. The data from reference 2 show the increase in added circulation to be expected from a good internal-flow jet-flap system as the wing aspect ratio is increased. The data from the present investigation show, as expected, that the increase in  $C_{L,\Gamma}$  with aspect ratio is somewhat less for the EBF than for the internal-flow system.

In figure 18 are values of  $C_{L,\Gamma}$  for several different thrust coefficients and values of  $\Delta C_L$  (incremental lift due to flap deflection) for  $C_\mu = 0$  as a function of the ratio of flap span to wing span. Also presented for comparison purposes are calculated values of  $\Delta C_L$  from the method presented in reference 3. These data show that the measured values of  $\Delta C_L$  at  $C_\mu = 0$  are considerably lower than the calculated values for a given flap span. The values of  $C_{L,\Gamma}$  for the power-on tests are shown to vary



almost linearly with flap span in the same manner as would be expected for circulation lift of an unpowered wing (ref. 3). It should be pointed out that the results presented in figure 18 are not only a function of flap span and wing aspect ratio, but also of engine position; and the present data were obtained with uniform spacing of the engines over the exposed span of the flap.

Two engines. - In order to determine the effects of spanwise engine location on the longitudinal aerodynamic characteristics of the model, a few tests were made with only the inboard engines operating and the results are presented in figures 19 and 20. The summary plot presented as figure 21 shows that for a given thrust coefficient  $C_{\mu}$  the two-engine configuration with engines close inboard produced almost as much total lift and circulation lift coefficients ( $C_L$  and  $C_{L,\Gamma}$ ) as the four-engine configuration with the engines spread uniformly over the exposed span of the flap. In order to remove differences in pitching moment from the comparison, the data are presented in figure 22 in terms of  $C_{L,trim}$ . These data show that for a given thrust coefficient  $C_{\mu}$  the trim lift coefficients and the drag coefficients ( $C_{L,trim}$  and  $C_D$ ) for the two-engine inboard configuration are the same as those of the four-engine spread configuration. This result is further evidence of substantial lift carryover, or induced lift, far removed spanwise from the jet itself.

One means of determining the overall efficiencies of jet-flap configurations is to compare the thrust-weight ratio  $T/W$  required to fly in level flight. In the present investigation the term  $\frac{C_{\mu} + C_D}{C_{L,trim}}$  is used to provide a measure of this efficiency. This term is approximately equal to the thrust-weight ratio required to fly in level flight at an angle of attack of  $0^\circ$  and provides a convenient method for making a comparison when data are not available for the exact flap angle required for trim drag conditions. The  $C_{L,trim}$  is the tail-off lift coefficient  $C_L$  corrected for pitch trim; that is,  $C_{L,trim} = C_L + \frac{C_m}{l/c}$  where a tail arm  $l/c$  of 3.5 is assumed. Data are presented in terms of the parameter  $\frac{C_{\mu} + C_D}{C_{L,trim}}$  in figure 23 and show that the minimum thrust required to fly at a given  $C_L$  was obtained with the wing having an aspect ratio of 7 and a full-span flap. Reducing the wing aspect ratio or the span of the flap increased the thrust required to fly at a given trim lift coefficient  $C_{L,trim}$ .

Inoperative engine. - The basic aerodynamic wind-on data for the model with one engine inoperative are presented in figures 24 to 29. For convenience in analyzing the basic data, summary plots of the basic data are presented in figure 30 and show that a greater loss in lift occurred with an inboard engine inoperative than with an outboard engine inoperative for the configurations investigated. This result is generally similar to that reported in other investigations (for example, ref. 4).

## Pressure Data

In order to gain a better understanding of the spreading of the engine jet exhaust and spanwise lift distribution, chordwise pressure-distribution data were obtained for several spanwise stations and are presented in tables III to XXVII and also presented in figures 31 to 80. In general, these data show that the flaps have large loads, especially behind the engines where very large positive and negative pressures were measured. In order to illustrate further the type of spanwise loading obtained in the tests, the pressure plots of figures 48, 51, 53, 58, 62, 66, 74, and 78 were faired and integrated to determine the section normal-force coefficient  $c_n$  for each section along the span. A sample of the fairing method used is illustrated in figure 78. This is the coefficient of force normal to the surface of the wing at each chordwise station. These normal-force coefficients  $c_n$  were then plotted against the wing semispan and presented as figures 81 to 84. Portions of the curves are estimated, but are believed to be a representative illustration of a typical spanwise load distribution for a straight-wing, externally blown jet-flap configuration. The plots in figure 81 present a convenient comparison of the spanwise load distribution of the three configurations tested and show that high peak loads are obtained behind the engine positions regardless of the wing aspect ratio or flap span. One significant point noted in figure 81 is that the wing with the largest flap span and, consequently, the greatest distance between the engines, still showed relatively high values of section normal-force coefficients between the engines, indicating fairly good lift carryover at the wing midsemispan where the exhaust flow is probably minimum.

Typical spanwise loading curves for the model with the two- and four-engine configurations, both for the same total-thrust coefficient  $C_{\mu}$ , are presented in figures 82 and 83. The plots show a substantial lift carryover to the outer wing panels when the engines are located close inboard. For instance, values of  $c_n$  of about 2.5 near the tip of the flap were noted for the two-engine configurations compared with about 3 between the engines for the four-engine configurations. Typical spanwise loading curves for an engine-inoperative case are presented in figure 84 for the wing having an aspect ratio 7 and a partial-span flap. The plots show that with an engine inoperative there is still a substantial lift carryover behind the inoperative engine.

## CONCLUSIONS

The following conclusions are drawn from a wind-tunnel investigation to determine the effects of flap span and wing aspect ratio on the aerodynamic characteristics of an externally blown jet-flap STOL model:

1. Reducing the wing flap span or wing aspect ratio adversely affected the aerodynamic characteristics of the model.

2. An inoperative inboard engine caused a greater loss in trim lift than an inoperative outboard engine.

3. The two-engine configuration with the engines located close inboard had about the same longitudinal aerodynamic characteristics as the four-engine configuration with the engines located uniformly over the exposed span of the flap.

4. The spanwise lift distribution of an externally blown jet flap is characterized by high peak loads, mainly on the flaps behind each engine.

5. There is a substantial spanwise lift carryover to stations far removed from the jet itself. This result was evidenced by the lift on the unflapped tip portion of the wing with a partial-span flap, on the outer part of the wing when only the inboard engine was operating, and by the lift between fairly widely spaced engines of the aspect-ratio-7 wing with a full-span flap.

Langley Research Center,  
National Aeronautics and Space Administration,  
Hampton, Va., April 20, 1973.

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TABLE I. - DIMENSIONS OF MODEL

Fuselage:

Length, m (ft) . . . . .	2.046 (6.714)
Diameter, m (ft) . . . . .	0.196 (0.642)

Wing:

Aspect ratio . . . . .	7.00
Area, m <sup>2</sup> (ft <sup>2</sup> ) . . . . .	0.452 (4.86)
Span, m (ft) . . . . .	1.778 (5.833)
Chord, m (ft) . . . . .	0.254 (0.833)
Flap span, percent wing span . . . . .	1.00 and 0.75
Aspect ratio . . . . .	5.25
Area, m <sup>2</sup> (ft <sup>2</sup> ) . . . . .	0.339 (3.65)
Span, m (ft) . . . . .	1.334 (4.375)
Chord, m (ft) . . . . .	0.254 (0.833)
Flap span, percent wing span . . . . .	1.00
Vane chord $c_v$ , m (ft) . . . . .	0.038 (0.125)
Flap chord $c_f$ , m (ft) . . . . .	0.076 (0.250)

Leading-edge slat:

Span, percent wing span . . . . .	1.00
Chord, m (ft) . . . . .	0.048 (0.158)

TABLE II. - VANE AND FLAP AIRFOIL COORDINATES<sup>a</sup>

$\frac{x}{\text{Chord}} \times 100$	$\frac{z_u}{\text{Chord}} \times 100$	$\frac{z_l}{\text{Chord}} \times 100$
0	0	0
5	9.8	-3.3
10	13.0	-4.1
15	15.0	-3.8
20	16.0	-3.8
25	17.2	-3.5
30	17.3	-3.3
40	17.0	-2.8
50	15.2	-2.2
60	12.5	-1.7
70	10.0	-1.3
80	7.1	-.8
90	4.0	-.7
100	1.2	-.3

<sup>a</sup> Values are given in percent vane or flap chord.

TABLE III. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. FULL-SPAN FLAP;  $\delta_f = 35^\circ$ ; $C_\mu = 2.05$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.2263	-.8560	-1.8272	-2.5228	-2.3335	-1.1256	-.9910	-1.1413
2	-2.4857	-1.2268	-2.1929	-2.5023	-2.2867	-1.8043	-1.3958	-1.2706
3	-2.4476	-2.5737	-2.1605	-2.4408	-2.3204	-2.0362	-1.8026	-1.3040
4	-2.0959	-2.1955	-1.9958	-2.2681	-2.0381	-2.0324	-1.6941	-1.2977
5	-1.8614	-2.0153	-2.2186	-2.1280	-1.9857	-1.9296	-1.5773	-1.2539
6	-1.8453	-1.9083	-1.9810	-1.9434	-1.9109	-1.8922	-1.6253	-1.3436
7	-1.6914	-1.9611	-1.9537	-1.8767	-1.8380	-1.8810	-1.7067	-1.4605
8	-1.8013	-.0117	-.0103	-1.7964	-1.7912	-1.8268	-1.7734	-1.6023
9	-.6128	.6670	.6456	.6428	.6134	.6003	.4362	.2818
10	.6011	-.2576	.5812	.6359	.5760	.3815	.3423	.2943
11	-2.5386	-5.0241	-3.9517	-3.1057	-3.1076	-2.8252	-2.7144	-2.7770
12	-3.6772	-5.1384	-5.0422	-4.1705	-4.0667	-4.8502	-4.8634	-4.4857
13	-3.0602	-4.0756	-4.0218	-3.3296	-3.3319	-3.9957	-3.8723	-3.6451
14	-1.4144	-1.8673	-2.1229	-1.4528	-1.6230	-2.0100	-2.1385	-1.7254
15	.6245	.4970	.0581	.5145	.4320	.2955	.0313	.2275
16	1.0467	4.2775	3.8326	1.0205	1.0135	1.2361	1.4882	.9535
17	.7682	5.9462	6.1643	.9624	.7050	1.3483	1.6971	.8558
18	-1.7295	-1.1213	-11.2758	-1.8306	-1.8773	-3.1019	-5.0925	-2.1907
19	-2.6975	-6.5218	-8.2334	-2.6903	-2.9823	-4.7660	-5.8043	-3.8202
20	-2.2292	-3.7055	-4.5671	-1.9844	-2.4064	-3.8815	-3.8077	-3.2523
21	-1.0612	-1.1462	-1.0990	-.8016	-1.0620	-1.0714	-1.3958	-1.9153
22	.9573	10.8281	21.5133	.9727	.8901	1.8120	4.1457	.8524
23	.8943	8.3651	16.5713	.9128	-.1552	1.8588	5.3230	.7410

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.5580	-3.4005	-4.0622	-5.9718	-5.4863	-3.3295	-3.7636	-3.5465
2	-5.6142	-3.6029	-4.1553	-5.5030	-5.1300	-3.6670	-3.5533	-3.2862
3	-4.6647	-3.6207	-3.7813	-4.8378	-4.4249	-3.5011	-3.1746	-2.8085
4	-3.4685	-3.2690	-3.6762	-3.8761	-3.4992	-3.1730	-2.7075	-2.3752
5	-2.5050	-2.7591	-3.2057	-3.2005	-2.9449	-2.9977	-2.4086	-2.0236
6	-2.1843	-2.4237	-2.6162	-2.6231	-2.5716	-2.7074	-2.2931	-2.0123
7	-2.0291	-2.1473	-2.3801	-2.3163	-2.3058	-2.4019	-2.3495	-2.2363
8	-2.0336	-.0163	-.0103	-2.1492	-2.2209	-2.2172	-2.3562	-2.4277
9	.7731	.9180	1.2755	.8153	.7486	.6939	.5577	.3135
10	.8544	-.1596	1.5651	.8756	.8070	.7052	.5682	.4061
11	-3.0044	-6.1757	-4.8343	-3.4966	-3.5708	-3.0693	-4.3800	-3.4435
12	-3.5941	-4.9610	-4.9102	-4.6809	-4.4513	-5.4958	-6.3681	-6.5046
13	-2.8714	-3.4330	-3.6176	-3.7003	-3.5633	-4.5022	-4.9016	-5.5224
14	-1.5252	-1.6493	-2.1474	-1.5557	-1.7986	-2.3284	-2.7580	-2.7749
15	.6386	.20355	.3068	.5550	.4563	.3884	1.5255	.1746
16	1.0565	6.2411	7.4670	1.0221	1.0295	1.0823	2.7426	.7282
17	.8145	7.7504	9.4975	1.0239	.7429	1.3444	2.6120	.7052
18	-1.7557	-1.0789	-12.4572	-1.9268	-2.0381	-3.2089	-5.6781	-3.3155
19	-2.7045	-5.4550	-8.6363	-2.9178	-3.0411	-5.1753	-7.1528	-5.7765
20	-2.1466	-2.7104	-4.1243	-2.2181	-2.4227	-3.8687	-4.9922	-5.0196
21	-1.2016	-1.0612	-1.1651	-1.0341	-1.1274	-1.2349	-2.0617	-2.5455
22	1.0244	11.7357	20.2585	1.0377	.9088	1.6555	4.6653	.6924
23	.5786	9.3927	13.8481	.9911	-.1169	1.4745	5.5420	.7619

TABLE IV.- PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. FULL-SPAN FLAP;  $\delta_f = 35^\circ$ ; $C_\mu = 4.11$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.3976	-1.9074	-1.8641	-2.7228	-2.3541	-1.1556	-1.6774	-1.1044
2	-2.5706	-1.3194	-2.0600	-2.6615	-2.3672	-1.6626	-1.6346	-1.2833
3	-2.5548	-2.6650	-2.1673	-2.5575	-2.4175	-2.1752	-1.6239	-1.3765
4	-2.3041	-2.4356	-2.2372	-2.4468	-2.1957	-2.2143	-1.8240	-1.3727
5	-2.0305	-2.2753	-2.3650	-2.3377	-2.1510	-2.1342	-1.7056	-1.4101
6	-2.0806	-2.1741	-2.2202	-2.1588	-2.1379	-2.1361	-1.8157	-1.5453
7	-1.5403	-2.2935	-2.2713	-2.1466	-2.0969	-2.1398	-2.0071	-1.6666
8	-2.1960	-0.0132	-0.0051	-2.1128	-2.0969	-2.1584	-2.1027	-1.8761
9	.6257	.4297	.5958	.6748	.5947	.4977	.4266	.3267
10	.5933	-1.0871	.5470	.6544	.5555	.3020	.3433	.2830
11	-2.5528	-5.2465	-5.1185	-3.2658	-3.4166	-3.0345	-3.1364	-2.9405
12	-3.5756	-6.0018	-6.5054	-4.7504	-4.7120	-5.5582	-5.7612	-5.1518
13	-3.5152	-4.8725	-5.0957	-3.7571	-3.9497	-4.8406	-4.8254	-4.1223
14	-1.8936	-2.4473	-2.6751	-1.8572	-2.1528	-2.5498	-2.7205	-2.2400
15	-2.2294	-3.5661	-5.282	.4192	.1864	-.0559	-.6593	-.1394
16	.6476	3.3452	6.6272	1.0872	1.0514	1.2546	1.7271	1.0404
17	.6683	6.2155	11.0749	.9952	.7382	2.0133	2.0580	.5466
18	-2.1931	-1.8161	-18.9114	-2.2628	-2.3728	-3.4967	-5.5262	-2.5395
19	-3.5810	-8.8974	-12.6275	-3.5049	-3.9832	-6.2516	-7.0653	-4.6360
20	-2.9104	-5.1165	-6.4339	-2.8506	-3.4762	-4.7474	-4.9416	-4.0557
21	-1.4743	-1.6525	-1.5045	-1.3887	-1.6048	-1.2768	-1.8344	-2.4705
22	.5441	14.6552	40.8029	.9713	.8240	2.8969	4.3221	.8966
23	.5806	15.6491	31.2242	.9356	.0913	2.5930	7.2125	.8906

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-6.1622	-4.1057	-4.1424	-6.4642	-5.9713	-3.2419	-3.6321	-3.8144
2	-6.2053	-3.7565	-4.4977	-6.1176	-5.5508	-3.9196	-3.5882	-3.5232
3	-5.2044	-4.0332	-4.1699	-5.3351	-4.8356	-3.8632	-3.3138	-3.0456
4	-3.9302	-3.7166	-4.2488	-4.3690	-3.8877	-3.6061	-3.0540	-2.6875
5	-2.9032	-3.1724	-3.6414	-3.6791	-3.3170	-3.6324	-2.6958	-2.2957
6	-2.6265	-2.8956	-3.0923	-3.0659	-2.9697	-3.0373	-2.6075	-2.2706
7	-2.5294	-2.8395	-2.9841	-2.8400	-2.7651	-2.8402	-2.7629	-2.5345
8	-2.5652	-.6294	-.0086	-2.6564	-2.6975	-2.6806	-2.8592	-2.7651
9	.7712	.5343	1.2065	.8444	.7284	.3661	.5006	.3562
10	.8419	-1.0522	1.4588	.8907	.7848	.4919	.5176	.4233
11	-3.5594	-6.5507	-6.2617	-4.0258	-4.1936	-3.7225	-4.3234	-3.8793
12	-4.2480	-6.3667	-6.7268	-5.6148	-5.5152	-6.3130	-7.7251	-7.3146
13	-3.5325	-4.7630	-5.1000	-4.4513	-4.4956	-5.8268	-6.1185	-6.2065
14	-2.1572	-2.5221	-3.0047	-2.1622	-2.4967	-2.9791	-3.2928	-3.3263
15	.0574	-2.7045	.2157	.4325	.3004	-.1051	.1718	-.1278
16	1.0465	5.2913	9.2625	1.1138	1.0908	1.4118	3.0556	.8215
17	.8743	8.6323	13.6388	1.0675	.8317	2.4575	3.6623	.8326
18	-2.4525	-1.8375	-20.1442	-2.6439	-2.9190	-4.1505	-7.2555	-3.8500
19	-3.5575	-8.4443	-13.0777	-3.9571	-4.4977	-7.7603	-9.0699	-6.7930
20	-2.8756	-4.7251	-6.4779	-3.2072	-3.7600	-5.6222	-6.4243	-5.5635
21	-1.6596	-1.5510	-1.7332	-1.6474	-1.7890	-1.6538	-2.7545	-3.7013
22	1.0215	17.2765	40.0344	1.0400	.8692	3.3362	6.4528	.7565
23	1.1201	17.4634	27.6175	1.0675	.5520	3.0469	8.8816	.5116

TABLE V.- PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 35^\circ$ ;  $C_{\mu} = 0$ .(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-1.3313	-.9240	-1.2242	-1.0845	-.8978	-1.0096		
2	-1.3356	-1.0423	-1.3150	-1.2591	-.9895	-1.0602		
3	-1.4062	-1.3373	-1.4547	-1.4320	-1.2321	-1.1335		
4	-1.3328	-1.2984	-1.4530	-1.4600	-1.2551	-1.2073		
5	-1.0828	-1.0962	-1.3150	-1.3395	-1.1958	-1.0602		
6	-1.0348	-1.1082	-1.1806	-1.1404	-1.0698	-.9322		
7	-.8282	-1.0483	-1.0862	-1.0635	-.9552	-.7756		
8	-.7923	.0075	-.0035	-.9972	-.8348	-.6743		
9	.3610	.3894	.3790	.2969	.2904	.1739		
10	.3789	.3535	.4052	.3301	.2407	.2847		
11	-2.1325	-2.0262	-2.9741	-2.9077	-2.2675	-2.6114		
12	-1.9483	-2.1819	-2.6300	-2.7540	-2.2561	-2.1166		
13	-1.5949	-1.7297	-1.8250	-1.8704	-1.6027	-1.3277		
14	-.6170	-.6889	-.7195	-2.5008	-.7183	-.5349		
15	.7968	-.0090	.4314	.4297	-.4375	.5942		
16	.9750	.4175	.9781	.7441	-4.0345	.7719		
17	.8432	.5107	.8856	.7703	.4165	.6191		
18	-1.0603	-.0749	-1.1317	-1.1963	-1.0182	-.9456		
19	-1.5679	-1.1846	-1.4233	-1.2382	-1.1233	-1.2016		
20	-.5961	-.7818	-1.0112	-.7841	-.7106	-.9752		
21	-.3025	-.4433	-.1816	-.1485	-.1891	-.4699		
22	.9601	.5332	.9886	.7703	.3573	.7089		
23	.5916	.5931	.8262	.6602	.3325	.4146		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.9951	-2.1286	-3.4262	-2.9780	-2.4417	-2.7156		
2	-2.8014	-2.2099	-3.4105	-2.9500	-2.6467	-2.8784		
3	-2.2715	-1.9322	-2.9045	-2.6489	-2.3556	-2.6045		
4	-1.4278	-1.6454	-2.1114	-2.0659	-1.8998	-2.0606		
5	-.8258	-1.2356	-1.4987	-1.5214	-1.6068	-1.5034		
6	-.7027	-1.0059	-1.0277	-1.1030	-1.3272	-1.2238		
7	-.6036	-.7582	-.7196	-.8456	-1.1357	-.9805		
8	-.5751	-.0030	-.0018	-.7581	-1.0112	-.8388		
9	.5871	.5916	.5673	.5166	.4693	.3601		
10	.6397	.6006	.6426	.6129	.5402	.4827		
11	-.4580	-1.6019	-.8859	-2.4668	-2.9454	-3.1235		
12	-.4880	-1.5359	-.8176	-1.9293	-2.6237	-2.3709		
13	-.8123	-.9038	-.8789	-1.1660	-1.8059	-1.5570		
14	-.4610	-.5736	-.8491	-1.9941	-.7450	-.5937		
15	.9069	.6111	.6531	.6654	.2279	.5727		
16	.9355	.7222	1.0261	.8843	-2.7386	.9233		
17	.8333	.7057	.9211	.9246	.6110	.7777		
18	-1.0374	-.0706	-.5182	-1.0837	-1.0437	-1.1471		
19	-1.4698	-1.0014	-.4465	-1.0260	-1.4478	-1.4765		
20	-.6456	-.6651	-.4114	-.7003	-1.0533	-1.1969		
21	-.4460	-.6306	-.4149	-.7108	-.2356	-.4960		
22	.9790	.6967	.9876	.9946	.6493	.7068		
23	1.1051	.7027	.8458	.7740	.5785	.4118		



TABLE VI. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 35^\circ$ ; $C_\mu = 2.05$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.0063	-1.9567	-2.0924	-1.6311	-1.2816	-1.2682		
2	-2.0048	-1.7943	-2.1363	-1.9153	-1.4677	-1.4754		
3	-2.0364	-2.1237	-2.1573	-2.0433	-1.6500	-1.6423		
4	-1.9748	-2.0094	-2.1994	-1.9960	-1.7612	-1.6097		
5	-1.7386	-1.8289	-1.9995	-1.9626	-1.7478	-1.5252		
6	-1.8123	-1.9447	-1.9118	-1.8241	-1.6807	-1.4428		
7	-1.8424	-2.0319	-1.9451	-1.8837	-1.7075	-1.4466		
8	-2.1372	-.0211	-.0105	-1.8942	-1.8245	-1.4447		
9	.4528	.4768	.6420	.5947	.2917	.4318		
10	.4663	-.5084	.6210	.5649	.4164	.3646		
11	-4.2427	-8.4372	-4.2340	-3.6815	-5.8266	-4.3417		
12	-4.8142	-7.0310	-5.1793	-4.5918	-5.8017	-4.1172		
13	-3.9946	-5.2383	-3.9463	-3.4728	-4.4779	-3.1138		
14	-1.9266	-2.1898	-2.1030	-3.2833	-2.2965	-1.6883		
15	.2181	2.5602	.2193	.7175	-1.2355	-.2878		
16	.9943	11.5044	1.1964	.7806	-3.4361	1.0190		
17	.8664	15.6185	1.2876	1.3876	3.3600	.9921		
18	-2.5297	-4.4984	-2.7344	-2.5327	-7.8488	-2.3771		
19	-3.3554	-11.5097	-4.5812	-4.5777	-7.7720	-3.8333		
20	-3.0741	-5.1962	-3.4464	-3.5043	-5.0112	-3.7853		
21	-1.1987	-1.7627	-1.2348	-.5735	-1.2912	-2.5958		
22	1.1883	36.1047	1.7875	.7455	8.3761	1.0036		
23	.9101	19.9417	1.2367	.9982	9.3682	.7330		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-4.9635	-5.0810	-5.4810	-4.6958	-2.8075	-3.6991		
2	-4.7075	-4.0688	-5.4266	-4.6062	-3.8682	-3.9720		
3	-3.8277	-3.7871	-4.5921	-4.1090	-3.7030	-3.5781		
4	-2.8275	-3.1951	-3.6487	-3.4081	-3.1207	-2.9209		
5	-2.1542	-2.6332	-2.9759	-2.9250	-2.8094	-2.3886		
6	-2.0472	-2.5232	-2.5947	-2.5174	-2.5615	-2.1580		
7	-2.1195	-2.4133	-2.4489	-2.3857	-2.4578	-1.9889		
8	-2.1964	-.0105	-.0211	-2.2802	-2.4693	-1.8870		
9	.6358	.7202	.7959	.6923	.3633	.5824		
10	.7443	-.2034	.8451	.7638	.6900	.5843		
11	-4.0175	-8.8364	-4.6659	-3.9825	-6.9505	-5.3037		
12	-3.7223	-7.4008	-5.2720	-4.9434	-6.8218	-5.2307		
13	-3.2056	-5.3492	-3.9597	-3.6927	-5.2537	-3.9893		
14	-1.7701	-2.1015	-2.3119	-4.1354	-2.6519	-2.1849		
15	.2591	3.1399	.2794	.5500	-1.4047	-.5073		
16	.9402	13.0866	1.2791	.6237	-3.0208	1.0340		
17	.9447	16.5174	1.4865	1.4882	3.4058	.9610		
18	-2.2295	-4.0806	-2.9671	-2.9039	-7.9479	-3.0573		
19	-3.1318	-11.2134	-4.5324	-4.8380	-7.8825	-4.7580		
20	-2.3786	-4.8716	-3.2710	-3.5381	-5.2691	-4.6100		
21	-1.1961	-1.5764	-1.2807	-.7923	-1.6392	-3.1918		
22	1.2667	33.7460	2.0417	.8680	8.8451	.9437		
23	1.2113	18.8271	1.3301	1.2598	11.1669	.8572		

TABLE VII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 35^\circ$ ; $C_\mu = 4.11$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.2367	-3.1640	-2.2747	-1.4763	-1.5480	-1.1734		
2	-2.2382	-1.8502	-2.4703	-1.8833	-1.6894	-1.4371		
3	-2.1678	-2.1573	-2.3603	-2.0825	-1.8155	-1.6626		
4	-2.1124	-2.0839	-2.3515	-2.0650	-1.8403	-1.6855		
5	-1.9386	-1.8966	-2.2921	-2.0650	-1.9684	-1.6034		
6	-2.0180	-2.1453	-2.1733	-2.0021	-1.9034	-1.6129		
7	-2.1243	-2.3191	-2.2624	-2.1192	-2.0334	-1.6550		
8	-2.5408	-.0225	-.0105	-2.2030	-2.2302	-1.7238		
9	.1483	.3671	.6133	.5854	.0975	.5906		
10	.1843	-1.2045	.5958	.5260	.3211	.3574		
11	-4.8753	-12.4100	-4.3117	-2.7551	-7.0862	-4.8942		
12	-5.4530	-9.2851	-6.0710	-4.4812	-6.8874	-4.8063		
13	-4.6890	-6.6290	-4.7922	-3.8907	-5.4388	-3.9692		
14	-2.5483	-2.6547	-2.8722	-3.4732	-3.0367	-2.3773		
15	-.6877	3.8658	.1206	-.8229	-2.6927	-1.7563		
16	.8840	20.0270	1.0799	.0210	-2.6411	.7780		
17	.8091	28.7804	1.9605	2.3327	4.5511	1.0780		
18	-3.1550	-8.6978	-3.5133	-3.1639	-10.3636	-3.2526		
19	-3.8381	-18.1431	-6.1776	-6.4624	-10.3311	-5.2420		
20	-4.0254	-7.4859	-4.6245	-4.9879	-6.6180	-5.2344		
21	-1.5895	-2.3550	-1.6248	-.3704	-1.6626	-3.2736		
22	1.2376		2.4498	1.8505	10.4039	1.0857		
23	1.2766	42.3570	1.6792	2.6228	14.5956	1.1373		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.5120	-5.7872	-6.0631	-4.8596	-3.0474	-3.8151		
2	-5.1675	-4.4063	-5.9052	-4.8894	-4.3716	-4.3006		
3	-4.2303	-4.2784	-4.9824	-4.4543	-4.1298	-3.8803		
4	-3.2449	-3.5849	-4.0666	-3.7544	-3.4907	-3.2202		
5	-2.5454	-2.9742	-3.4123	-3.2509	-3.1511	-2.6387		
6	-2.5108	-3.0072	-3.0649	-2.8877	-2.9611	-2.4583		
7	-2.6943	-2.9546	-2.9579	-2.8351	-2.9016	-2.3700		
8	-2.9711	-.0226	-.0123	-2.7965	-3.0686	-2.3393		
9	.5281	.5025	.7843	.6422	.2227	.6756		
10	.5733	-1.0125	.8440	.7440	.6776	.5912		
11	-4.8520	-12.7463	-4.9666	-3.4719	-8.3248	-6.2925		
12	-4.8425	-10.2145	-6.7052	-5.2649	-8.3286	-6.3098		
13	-4.1896	-7.2765	-5.2596	-4.3736	-6.5439	-5.0855		
14	-2.5123	-2.8553	-3.2456	-3.4649	-3.5829	-3.0379		
15	-.5522	4.1588	.0000	-.9193	-3.1855	-1.4719		
16	.9314	21.9630	1.1546	-.0509	-2.2031	.9808		
17	1.0021	30.3393	2.3144	2.2512	5.0462	1.1056		
18	-3.1996	-8.5582	-4.1965	-3.6631	-11.1036	-4.2756		
19	-3.3969	-18.5966	-6.6070	-6.8070	-11.1803	-6.5286		
20	-3.4360	-7.6150	-4.8456	-5.0122	-7.4229	-6.5439		
21	-1.5962	-2.6116	-1.8544	-.5561	-2.1724	-4.3869		
22	1.3673		2.9338	1.6283	11.7699	1.0365		
23	1.5723	38.1182	1.9038	2.6636	16.8794	1.2112		

TABLE VIII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 5.25. FULL-SPAN FLAP;  $\delta_f = 35^\circ$ ; $C_\mu = 2.75$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-1.9705	-2.5584	-1.8458	-1.4187	-1.0994	-.8117		
2	-1.9393	-1.4998	-2.0133	-1.5477	-1.1434	-.8685		
3	-1.9091	-2.0571	-1.9580	-1.8073	-1.1544	-.9555		
4	-1.8344	-4.7934	-1.9966	-1.8224	-1.3724	-1.0389		
5	-1.7669	-2.2496	-1.9748	-1.8140	-1.4329	-1.0591		
6	-1.8402	-1.9307	-1.8743	-1.7520	-1.4512	-1.1709		
7	-1.7583	-1.9508	-1.8961	-1.7872	-1.5685	-1.3394		
8	-2.0097	-.0129	-.0067	-1.8408	-1.8452	-1.6564		
9	.4540	.5704	.6451	.5680	.3080	.1998		
10	.4565	-.4497	.5932	.4960	.2218	.1833		
11	-3.8238	-7.5225	-3.2896	-2.7335	-4.5075	-4.1960		
12	-4.6357	-6.7167	-4.6849	-4.0350	-5.3247	-4.6779		
13	-4.1599	-5.0218	-3.6732	-3.1858	-3.8772	-4.4037		
14	-1.8890	-2.4995	-2.0502	-2.6665	-2.0614	-2.7632		
15	.2931	2.0820	.3854	.3954	-.4947	-.1796		
16	.6437	11.1068	1.0238	.6619	-1.4402	.9330		
17	.6724	15.1444	.6066	1.5550	3.6734	.8340		
18	-2.3645	-3.9703	-2.5242	-2.2779	-8.8538	-3.4686		
19	-3.9172	-10.7917	-4.1623	-3.8792	-7.7489	-5.8323		
20	-3.0453	-4.8839	-3.2930	-3.0049	-4.8433	-6.3105		
21	-1.1062	-1.9623	-1.2244	-.6331	-1.7430	-3.9981		
22	1.1437	36.7661	1.4829	.6887	11.0771	.8560		
23	.8621	20.3142	1.1361	.5194	10.4814	.5829		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-4.7957	-.9949	-4.9572	-3.9070	-2.0059	-1.7732		
2	-4.5582	-3.0553	-4.9318	-3.8563	-2.8020	-2.1537		
3	-3.7315	-3.7315	-4.2447	-3.4494	-2.7595	-2.0521		
4	-2.8424	-4.1528	-3.3346	-2.8906	-2.3365	-1.8193		
5	-2.2604	-2.7570	-2.8382	-2.5782	-2.1315	-1.7602		
6	-2.0403	-2.4920	-2.4482	-2.4887	-2.0502	-1.9763		
7	-1.9013	-2.3458	-2.3351	-2.3638	-2.2386	-2.7706		
8	-1.9636	-.0203	-.0219	-2.2422	-2.5932	-4.3959		
9	.6083	.7271	.7871	.6283	.2993	.3813		
10	.7083	-.1651	.7888	.7162	.3973	.1608		
11	-3.6855	-7.8001	-3.7331	-3.2401	-5.8643	-8.4964		
12	-3.8415	-6.9733	-4.8559	-4.7107	-5.3656	-9.7690		
13	-3.4520	-5.0824	-3.8665	-3.6385	-5.2105	-9.1465		
14	-1.7420	-2.7034	-2.2017	-3.0307	-2.7553	-5.5319		
15	.2810	3.1633	.4273	.6706	.1608	-1.1932		
16	.6706	12.4286	1.0557	.6908	-.9016	.7663		
17	.7198	15.5484	.4848	1.2516	3.4498	.7354		
18	-2.2126	-3.6156	-2.8011	-2.6289	-7.3794	-5.9752		
19	-3.4013	-10.7567	-4.3173	-4.1332	-8.6903	-8.1417		
20	-2.3530	-4.9390	-3.2856	-3.2367	-6.0675	-7.1591		
21	-1.0702	-2.0533	-1.2494	-.8949	-2.6708	-4.0432		
22	1.2862	31.3213	1.7904	.4966	8.7159	.6744		
23	1.0631	19.3968	1.2449	.3817	11.2492	.7871		

TABLE IX. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 5.25. FULL-SPAN FLAP;  $\delta_f = 35^\circ$ ; $C_{\mu} = 5.49$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.1240	-4.1276	-1.9122	-1.4512	-1.5127	-.8897		
2	-2.0710	-1.6543	-2.2278	-1.6249	-1.2679	-.9299		
3	-2.0568	-2.0524	-2.1910	-1.8303	-1.3830	-.9847		
4	-2.0496	-5.7101	-2.1977	-1.8871	-1.5323	-1.0943		
5	-1.9293	-2.5293	-2.1543	-1.9489	-1.6424	-1.1583		
6	-2.0868	-2.1025	-2.1359	-1.9122	-1.7301	-1.3172		
7	-2.0553	-2.2357	-2.1860	-2.0240	-1.9128	-1.6442		
8	-2.4146	-.0158	-.0084	-2.1109	-2.2818	-2.1229		
9	.0716	.3811	.6115	.2372	.1590	.2412		
10	.1003	-1.3378	.5630	.4227	.1371	.1631		
11	-4.5271	-10.9130	-3.4920	-2.0508	-5.5501	-4.9710		
12	-4.9482	-8.7075	-5.4275	-4.1951	-5.1190	-5.6561		
13	-3.9772	-6.2987	-4.3904	-3.6306	-4.9874	-5.0423		
14	-2.4749	-2.9704	-2.6286	-1.7786	-2.7156	-3.3524		
15	-.9053	3.0600	.0969	-.5845	-.8806	-.5371		
16	.4054	18.9074	.7401	.0468	-1.2551	1.9034		
17	.6361	26.4629	-.1653	1.8395	5.4646	.9833		
18	-2.8988	-7.5485	-3.0862	-2.6035	-12.7244	-4.1690		
19	-4.6747	-16.3909	-5.3507	-4.8881	-11.1843	-7.5433		
20	-4.0273	-6.7226	-4.2752	-3.7993	-6.7869	-8.1480		
21	-1.5068	-2.2415	-1.5748	-.6129	-2.6947	-5.3492		
22	1.3481		1.8461	.9857	16.5985	.9431		
23	1.3438		1.4234	.9088	16.1325	.8700		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.1901	.6562	-5.3662	-4.1750	-1.9998	-1.9408		
2	-5.0153	-3.4071	-5.3814	-4.1127	-3.1136	-2.3611		
3	-4.2105	-4.0617	-4.6771	-3.7959	-3.0965	-2.3224		
4	-3.2381	-3.5097	-3.8397	-3.2399	-2.7444	-2.0938		
5	-2.5966	-3.0185	-3.2635	-2.9721	-2.5048	-2.1104		
6	-2.4810	-2.8610	-2.9518	-2.8137	-2.4643	-2.3426		
7	-2.4752	-2.8379	-2.8659	-2.7328	-2.7242	-3.4632		
8	-2.7685	-.0231	-.0253	-2.6924	-3.2144	-5.4243		
9	.2428	.5476	.7338	.4837	.2102	.0627		
10	.4307	-1.2196	.8175	.6338	.3559	.1475		
11	-4.7176	-12.3204	-4.1649	-2.7379	-7.3209	-9.5216		
12	-4.7537	-9.9480	-6.2457	-5.0899	-7.7854	-11.3481		
13	-4.2639	-7.0583	-5.0276	-4.3166	-6.6316	-11.1952		
14	-2.6602	-3.4375	-3.1439	-2.9906	-3.6144	-7.2343		
15	-.6200	5.1685	.0876	-1.0193	-.3207	-1.6220		
16	.5232	21.5584	.8562	-.4802	-.1069	.8445		
17	.7443	28.2994	-.4667	1.4253	5.5445	.8574		
18	-3.1153	-7.3256	-3.7538	-2.7884	-12.1167	-8.0582		
19	-3.3075	-17.0234	-6.0317	-5.1876	-12.5572	-12.0117		
20	-3.5372	-7.2678	-4.7816	-4.1481	-8.4452	-11.5453		
21	-1.5967	-2.7541	-1.9005	-.9031	-3.7618	-5.9920		
22	1.6650		2.1575	.4719	14.4061	.6822		
23	1.5581	42.1961	1.6366	.3590	16.3753	.9828		

TABLE X. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. FULL-SPAN FLAP;  $\delta_f = 55^\circ$ ;  $C_{\mu} = 0$ .(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-1.2951	-.5588	-1.6163	-1.3888	-1.1281	-1.2272	-.9752	-.7163
2	-1.4770	-.8390	-1.4384	-1.2503	-1.2010	-1.0963	-.9961	-.7560
3	-1.6281	-2.3937	-1.3683	-1.4111	-1.3020	-1.2665	-1.0441	-.9188
4	-1.4946	-1.5680	-1.3461	-1.2349	-1.1917	-1.2366	-.9293	-.8270
5	-1.2570	-1.1294	-1.1767	-.9339	-1.0327	-1.0514	-.9710	-.8557
6	-1.1734	-1.0854	-1.0006	-.6602	-.8662	-.9054	-.9710	-.7372
7	-1.1411	-1.0707	-.7509	-.5678	-.5163	-.9447	-.9188	-.9188
8	-1.1602	-.0103	.0017	-.4943	-.4396	-.5425	-.8938	-1.0400
9	.5177	.4943	.5149	.5679	.5183	.4491	.3634	.3133
10	.5148	.4664	.4995	.5251	.5033	.4229	.3739	.2506
11	-3.6874	-3.4498	-2.2800	-.6790	-.7969	-1.8184	-1.9463	-2.9988
12	-3.2459	-3.1433	-1.5103	-.6978	-.7558	-1.1898	-2.6960	-3.3976
13	-1.8965	-2.1224	-.8928	-.7748	-.7446	-1.0738	-1.5892	-2.5623
14	-.7231	-.8184	-.8911	-.6517	-.7371	-.8587	-.8019	-1.0922
15	.5280	.5764	.2378	.2053	.1572	.1703	.2569	.1859
16	.9915	.8536	.9014	.9750	3.1061	.8401	.4323	.9315
17	.9592	.7392	.8022	.9544	.9262	.8177	.4846	1.1091
18	-1.7088	-.1027	-.4635	-.3660	-.5107	-.8456	-1.5161	-2.0841
19	-1.6296	-1.6296	-.4293	-.4190	-.4883	-1.3582	-1.1026	-2.3222
20	-1.0443	-.8859	-.4481	-.3797	-.4546	-.7689	-.5910	-1.6748
21	-.3799	-.3960	-.4550	-.3694	-.4471	-.4733	-.4469	-.4532
22	.9915	.8521	.9066	.9818	.9561	.8008	.4156	.9169
23	.9328	.7025	.6329	.9271	.9187	.8832	.7592	7.1203

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.0861	-1.5879	-2.7775	-3.5781	-3.3210	-2.6760	-2.7275	-2.5584
2	-3.1037	-1.8070	-2.6523	-3.2455	-3.0435	-2.4734	-2.4449	-2.2942
3	-2.5494	-1.7952	-2.1500	-2.7706	-2.6160	-2.1415	-2.0661	-1.8986
4	-1.7040	-1.3644	-1.5345	-2.0471	-1.8921	-1.6071	-1.5909	-1.4548
5	-1.0204	-1.0139	-1.1333	-1.3647	-1.2808	-1.1645	-1.3334	-1.1764
6	-.7719	-.9601	-.9001	-.8058	-.7764	-.8851	-1.0676	-.9755
7	-.7028	-.7910	-.8504	-.5298	-.5307	-.6113	-.8582	-.8268
8	-.6557	-.0044	-.0120	-.4698	-.4782	-.4107	-.8875	-.9294
9	.6983	.7013	.6738	.6721	.6452	.6058	.4418	.3120
10	.7219	.7116	.6841	.7047	.6640	.6171	.4585	.2931
11	-.6396	-.6234	-.7629	-.6566	-.6901	-.7013	-2.2252	-2.5391
12	-.6616	-.6454	-.7287	-.6927	-.6976	-.7276	-2.0472	-3.2090
13	-.6675	-.6822	-.7231	-.7081	-.7276	-.7463	-1.1785	-2.2210
14	-.6410	-.6013	-.6858	-.6618	-.6976	-.7107	-.7431	-.9524
15	.7704	.6954	.5555	.4149	.3958	.4408	.6344	.4460
16	1.0115	.9542	.9207	.9962	2.0725	.9847	.6114	.7558
17	.9600	.9306	.8299	.9447	.9434	.9115	.6155	.7370
18	-.3823	.0265	-.7664	-.4269	-.3713	-.5063	-.7222	-1.6914
19	-.3778	-.3734	-.5315	-.4115	-.4032	-.4669	-.5987	-1.7186
20	-.4131	-.3911	-.4715	-.4252	-.5194	-.4501	-.6343	-1.0069
21	-.3852	-.3734	-.4441	-.4200	-.3919	-.4369	-.5673	-.6615
22	.9953	.9659	.8281	.9756	.9584	.9341	.6784	.6365
23	.9542	.8601	.6944	.9687	.9584	.9397	.6490	5.0249

TABLE XI. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. FULL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 2.05$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.4895	-1.7492	-2.6417	-3.7551	-3.4067	-1.8298	-1.8260	-1.9756
2	-3.5285	-2.2900	-2.7855	-3.6355	-3.2319	-2.3449	-2.1020	-1.8571
3	-3.3933	-3.3055	-2.8456	-3.4950	-3.0292	-2.6146	-2.1746	-1.8903
4	-2.8890	-3.0581	-2.9374	-3.1720	-2.7912	-2.6648	-2.2659	-1.8011
5	-2.5450	-2.8540	-3.0020	-2.9544	-2.6703	-2.6220	-2.1622	-1.8281
6	-2.5363	-2.6616	-2.7164	-2.6621	-2.6239	-2.8823	-2.2389	-1.8654
7	-2.5421	-2.7812	-2.7855	-2.6054	-2.6015	-2.6927	-2.5087	-2.1414
8	-2.7987	-.0233	-.0119	-2.2949	-2.3412	-2.4230	-2.5336	-2.4547
9	.2683	.5536	.9589	.8042	.7588	.7476	.7660	.4732
10	.6619	-.0292	.9130	.8025	.7458	.6156	.5855	.3777
11	-6.6554	-16.3562	-12.4178	-8.2139	-8.5559	-8.2063	-7.5841	-5.1190
12	-6.6247	-11.9058	-10.8250	-8.2989	-8.3048	-9.8985	-9.8023	-8.4017
13	-5.0622	-7.8564	-7.4456	-5.6267	-5.7851	-7.5219	-7.2646	-6.1980
14	-2.8161	-3.3700	-2.3153	-2.8541	-3.2133	-3.7284	-3.5201	-3.4238
15	-.3091	-.7246	-4.8685	.0221	-.3180	-.9168	-2.1041	-1.5588
16	.7757	8.8258	5.5560	1.1187	1.1996	1.3223	2.4455	.9217
17	.4035	10.2678	9.1313	1.0439	.7216	1.5288	2.6843	.8781
18	-4.4045	-2.8803	-24.5517	-4.5302	-4.8758	-8.6507	-12.9995	-6.0901
19	-4.9558	-11.3108	-15.6085	-4.4572	-5.1807	-9.1900	-11.5551	-7.6277
20	-3.4957	-6.0869	-7.4983	-3.0615	-3.8251	-5.8111	-6.6657	-6.0341
21	-1.6239	-1.6235	-1.5401	-1.3514	-1.6476	-1.5379	-2.0833	-3.6354
22	.6838	11.3391	26.0475	.9181	.7662	1.8914	3.9320	.4712
23	1.0465	11.3814	25.6225	1.1867	.6639	3.3272	6.1278	-1.5334

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-6.2705	-4.2730	-4.6038	-6.9048	-6.5098	-4.0375	-4.3505	-4.2444
2	-6.1932	-4.2114	-4.5935	-6.5059	-6.0329	-4.4677	-4.1339	-3.8876
3	-5.0880	-3.8875	-4.1155	-5.6261	-5.1371	-4.1161	-3.6268	-3.3056
4	-3.7160	-3.5053	-4.4687	-4.4909	-4.1217	-3.7570	-3.2673	-2.8672
5	-2.5433	-2.5904	-3.4151	-3.6721	-3.4728	-3.5681	-2.9006	-2.6105
6	-2.2560	-2.6386	-2.9729	-3.0857	-3.1100	-3.3344	-2.6505	-2.6606
7	-2.2516	-2.4524	-2.8429	-2.7917	-2.8874	-3.0800	-3.1051	-2.5281
8	-2.2062	-.0117	-.0120	-2.3605	-2.6387	-2.6499	-3.1844	-3.3618
9	.8075	1.2126	1.5302	.8822	.8267	.7949	.7035	.4425
10	.8900	-.1100	1.6944	.9267	.8734	.7968	.6572	.3924
11	-4.5705	-13.7333	-12.0282	-7.9630	-8.8493	-8.7763	-9.8512	-6.6192
12	-3.4038	-7.5740	-7.6051	-7.3441	-7.7908	-10.1172	-11.4583	-10.5826
13	-2.5404	-4.4386	-5.1662	-4.7559	-4.9854	-7.7515	-8.3825	-8.3407
14	-1.7485	-1.8720	-3.1056	-2.5575	-3.0950	-3.8786	-4.6573	-4.6409
15	.3182	-.8327	-8.9921	-.0085	-.4040	-.6564	-.4111	-4.0754
16	1.0582	9.0132	9.3608	1.1182	-.7593	1.2120	3.4624	.7724
17	.8544	10.9370	15.2304	1.0771	.4302	1.7188	3.3985	.7787
18	-2.6756	-1.5750	-24.3915	-3.9849	-4.6341	-9.0830	-13.8644	-8.0945
19	-2.7207	-8.0562	-13.5976	-3.7952	-4.9127	-9.4028	-12.5545	-5.8140
20	-2.0563	-3.8592	-6.0329	-2.6737	-3.6018	-5.7337	-7.8483	-7.2452
21	-1.3912	-1.5656	-1.5249	-1.3659	-1.6476	-1.6045	-2.7649	-1.6101
22	.8900	13.6437	30.6249	1.0258	.7893	1.7300	3.9230	.4467
23	1.1618	14.2112	21.7308	1.1968	.8903	3.3984	10.0508	-.5703

TABLE XII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. FULL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 4.11$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-4.1225	-2.0124	-2.8630	-4.1125	-3.8930	-1.7595	-1.8653	-2.1574
2	-4.0159	-2.2601	-3.1177	-4.1211	-3.5246	-2.6084	-2.2012	-2.1157
3	-3.6377	-3.7198	-3.0835	-3.8493	-3.3414	-2.9094	-2.4954	-2.0005
4	-3.2772	-3.4912	-3.1861	-3.5621	-3.1263	-3.0029	-2.7103	-1.5586
5	-2.9152	-3.1644	-3.4869	-3.3451	-3.0403	-2.9487	-2.5075	-2.0739
6	-2.9240	-3.0955	-3.1690	-3.1006	-3.0291	-3.2703	-2.6498	-2.2225
7	-2.9958	-3.3578	-3.3109	-3.0767	-3.0497	-3.1955	-2.9857	-2.5830
8	-3.4076	-.0161	-.0137	-2.6819	-2.7393	-2.8496	-3.0233	-2.9648
9	.7521	.5380	1.0325	.7966	.6246	.6414	.7535	.5051
10	.7462	-.9327	.9436	.8120	.6788	.4301	.5385	.3485
11	-8.0521	-19.8653	-16.1732	-9.4215	-10.2597	-10.8431	-8.5755	-6.0423
12	-7.8854	-14.6355	-13.6856	-9.8660	-10.1325	-12.2828	-12.1097	-9.9315
13	-6.2568	-10.0566	-9.5355	-7.0080	-6.8080	-9.3921	-9.0665	-7.4486
14	-3.5967	-4.6783	-5.9124	-3.7091	-4.2408	-4.7176	-4.9783	-4.2676
15	-1.5566	-14.3879	-11.0539	-.4718	-1.9689	-3.0310	-2.9753	-3.1985
16	.5002	6.0417	7.6654	1.1157	-.3478	1.2829	3.3546	1.0500
17	.9178	13.5817	15.4248	1.0804	.6751	2.4872	3.3964	1.0500
18	-5.6104	-.3475	-41.4842	-5.9357	-6.6940	-12.4249	-18.3273	-7.4465
19	-6.8342	-10.8851	-24.5521	-6.4064	-7.7298	-12.5016	-16.2200	-9.5747
20	-5.6667	-8.8948	-11.3667	-4.7757	-6.0376	-7.8009	-9.1929	-7.6802
21	-2.3671	-2.3114	-2.2306	-2.3913	-2.5486	-1.9820	-2.9252	-4.7467
22	.6773	23.2944	46.7854	.9265	.2207	1.0098	4.8514	.6533
23	1.3865	26.0124	50.3839	1.3180	.8696	5.4306	12.4604	-2.5705

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-7.9055	-5.2220	-5.3321	-8.2834	-7.6361	-4.3850	-4.8301	-4.8510
2	-7.7320	-5.0835	-5.6844	-7.8348	-7.1491	-5.0732	-4.6326	-4.4650
3	-6.6650	-4.6546	-5.1602	-6.8138	-6.1111	-4.8927	-4.1357	-3.8376
4	-4.6885	-4.2817	-5.2306	-5.5280	-4.9359	-4.5223	-3.8124	-3.3068
5	-3.4656	-3.8734	-4.5689	-4.6582	-4.3004	-4.6915	-3.4805	-3.1175
6	-3.2043	-3.6302	-4.1133	-4.0085	-3.9375	-4.0634	-3.4935	-3.2837
7	-3.4460	-3.5005	-3.9947	-3.6853	-3.8058	-3.8040	-3.8544	-3.6131
8	-3.5801	-.0206	-.0206	-3.2212	-3.5652	-3.3151	-3.8880	-4.1188
9	.8522	.7282	1.6177	.8556	.6450	.6676	.7767	.5142
10	.8816	-.5565	1.7346	.9318	.8199	.6300	.7641	.4135
11	-7.1365	-19.5950	-17.8062	-10.6211	-12.0606	-12.0455	-11.8234	-8.1389
12	-5.4515	-12.2424	-13.1686	-10.2241	-10.9154	-13.4990	-14.4652	-13.5564
13	-4.5116	-7.7854	-9.1205	-7.0905	-6.8614	-10.4999	-10.8267	-10.0504
14	-3.2245	-3.7128	-6.8808	-3.9638	-4.6934	-5.4154	-6.1855	-5.8856
15	-1.4224	-12.3756	-11.9688	-.3266	-1.8822	-2.4238	-1.5946	-2.6941
16	.5804	7.6075	10.4299	1.2189	-.0113	1.4274	4.2572	.9992
17	1.0777	15.4563	18.6181	1.1312	1.1453	2.6892	4.3623	.9299
18	-4.7032	-.2241	-41.0321	-6.2603	-7.6700	-13.3956	-19.4671	-10.2980
19	-5.0096	-8.1328	-24.2693	-6.4425	-8.4315	-13.7115	-18.4348	-12.6710
20	-3.8955	-6.6546	-10.8750	-4.6250	-6.3631	-8.4898	-11.2757	-9.7000
21	-2.4600	-2.4349	-2.5234	-2.4787	-2.6607	-2.4351	-4.0202	-5.8393
22	.6426	19.1366	46.7557	.9300	.2106	1.6606	4.5407	.3946
23	1.4699	29.4467	44.5253	1.3701	1.1415	6.0574	12.9106	-1.0071

TABLE XIII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ;  $C_\mu = 0$ .(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-1.4621	-.5267	-1.1499	-1.0716	-.7937	-1.0431		
2	-1.4427	-.9250	-1.2751	-1.1116	-1.0792	-.9955		
3	-1.5800	-1.3786	-1.4334	-1.2856	-1.3400	-1.0602		
4	-1.3443	-1.3473	-1.3238	-1.3064	-1.2486	-1.1363		
5	-1.2025	-1.0668	-1.1168	-1.1916	-1.1858	-1.0469		
6	-1.1160	-.9952	-.8402	-.9811	-1.0659	-.9365		
7	-.9504	-.8012	-.5984	-.7759	-.9860	-.8451		
8	-.9698	-.0000	.0017	-.7132	-.8109	-.7633		
9	.4477	.4641	.5082	.4090	.3864	.2836		
10	.4551	.4611	.4856	.4403	.3655	.3350		
11	-3.5075	-1.9351	-.7585	-2.7729	-2.6648	-2.8133		
12	-2.8944	-1.9127	-.7828	-2.0458	-3.0645	-2.5163		
13	-1.8202	-1.0921	-.7915	-1.3795	-2.0538	-1.7302		
14	-.7296	-.8161	-.7515	-2.3224	-.9593	-.7519		
15	.5655	.2582	.2489	.3481	.0114	.3122		
16	.9461	.5566	.9938	.8302	-2.0557	.6605		
17	.9132	.6148	.9416	.8076	.4568	.6548		
18	-1.5263	.0119	-.4123	-1.4352	-1.5703	-1.6008		
19	-1.5099	-.4954	-.4297	-1.0838	-1.4276	-1.5513		
20	-.9295	-.4864	-.5289	-.5967	-.7576	-1.0107		
21	-.3551	-.5894	-.4210	-.3966	-.2303	-.4759		
22	.9923	.6282	1.0008	.8041	.3902	.6186		
23	.9386	.9475	.9572	.8650	.4835	.8299		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.1077	-1.3774	-3.4309	-2.7934	-2.4510	-2.6944		
2	-2.8734	-2.2065	-3.3504	-2.9003	-2.7346	-2.8783		
3	-2.2982	-2.1900	-2.8145	-2.6131	-2.4395	-2.6349		
4	-1.3414	-1.7034	-2.0491	-2.0123	-2.0198	-2.1099		
5	-1.2317	-1.2227	-1.3223	-1.4729	-1.6250	-1.5714		
6	-.8818	-.9388	-.8880	-.9966	-1.3031	-1.2188		
7	-.7180	-.6970	-.6498	-.8144	-1.1364	-1.0521		
8	-.6339	-.0180	.0000	-.7671	-1.0444	-.9562		
9	.6730	.6790	.6869	.6168	.5596	.4638		
10	.7166	.6655	.7254	.6588	.5979	.5289		
11	-.6490	-1.2317	-.6183	-2.8162	-3.4705	-3.2558		
12	-.6640	-.9955	-.6200	-1.9020	-2.7538	-2.7691		
13	-.6790	-.8067	-.6430	-1.0263	-1.8703	-1.9815		
14	-.6369	-.7796	-.6183	-1.8512	-.8815	-.8183		
15	.7662	.6745	.5099	.5502	.5691	.4963		
16	1.0111	.8293	1.0058	.2155	-2.1597	.9122		
17	1.7772	.7917	.9497	.6974	.6362	.7129		
18	-.3651	.0030	-.3433	-1.4852	-1.7439	-1.7074		
19	-.3786	-.4582	-.3573	-1.0859	-1.6270	-1.7841		
20	-.3996	-.4206	-.3521	-.4694	-.9313	-1.2456		
21	-.3591	-.6414	-.3310	-.3801	-.2453	-.4925		
22	.9870	.8488	.9918	.9357	.7225	.6094		
23	.9555	.8007	.9655	1.9327	.7014	.6190		



TABLE XIV.- PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_{\mu} = 2.05$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.1447	-1.3229	-2.9802	-2.4334	-1.3858	-1.6667		
2	-3.1087	-2.3222	-3.1321	-2.6849	-2.0012	-2.1656		
3	-2.9439	-2.8675	-3.0797	-2.6710	-2.3051	-2.2000		
4	-2.4091	-2.6833	-2.8369	-2.5697	-2.2210	-2.0643		
5	-2.2158	-2.4211	-2.6780	-2.5469	-2.2344	-1.9267		
6	-2.4555	-2.6128	-2.6255	-2.4177	-2.1981	-1.8961		
7	-2.6173	-2.8376	-2.7059	-2.5172	-2.2918	-1.9726		
8	-3.1297	-.0195	-.0175	-2.6325	-2.3625	-2.0911		
9	.0865	.6893	.7777	.6589	.4989	.5390		
10	.3716	.1139	.7638	.6799	.4702	.4626		
11	-7.9268	-16.0947	-7.7421	-5.4310	-9.0314	-5.9903		
12	-7.6466	-11.9583	-8.7133	-7.2145	-8.7791	-6.4491		
13	-6.0751	-8.1859	-6.4512	-5.6633	-6.7874	-5.0136		
14	-3.4743	-3.8173	-3.6143	-3.4046	-3.7540	-3.0640		
15	-1.1072	.2667	-1.6333	-2.0963	-1.3858	-.8563		
16	.3611	11.6834	1.2549	-.5817	-2.5001	.9882		
17	1.7367	17.4060	1.4594	1.1640	3.5973	1.1067		
18	-6.7747	-7.0773	-6.5263	-6.3149	-16.5489	-6.0935		
19	-7.1687	-16.2250	-7.5150	-6.7848	-11.8296	-7.2920		
20	-4.7852	-7.4713	-5.3454	-4.3672	-7.1448	-6.5007		
21	-1.6465	-1.9027	-1.7888	-.8735	-1.7547	-4.1554		
22	1.4445	34.5722	1.7110	1.9173	9.4691	.7799		
23	1.5986	23.3203	4.9705	2.1532	15.4422	1.4546		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.7376	-2.5899	-6.2793	-5.0030	-3.7536	-4.2416		
2	-5.3536	-4.1426	-6.1471	-5.2709	-4.4731	-4.6930		
3	-3.6210	-4.2756	-5.1810	-4.6099	-4.0758	-4.1529		
4	-2.7910	-3.6346	-4.0828	-3.8871	-3.5279	-3.4296		
5	-2.4992	-2.9331	-3.3106	-3.3582	-3.1094	-2.8008		
6	-2.3026	-2.7970	-2.9457	-2.9369	-2.8297	-2.5269		
7	-2.2210	-2.6428	-2.7853	-2.8664	-2.7776	-2.5191		
8	-2.2134	-.0242	-.0106	-2.9263	-2.8432	-2.5346		
9	.6533	1.1069	.8836	.7231	.6346	.6423		
10	.5822	.2314	.9101	.8554	.7060	.6423		
11	-5.3672	-14.9675	-7.1536	-4.5834	-10.1672	-7.0617		
12	-4.1895	-9.9572	-7.2894	-6.3780	-9.5692	-7.5709		
13	-3.2203	-6.3559	-5.3009	-5.1757	-7.2874	-5.7963		
14	-2.0623	-2.7033	-3.0039	-4.6275	-4.0584	-3.5820		
15	-.6472	-.8452	-1.8087	-2.8664	-1.6955	-1.2480		
16	.8604	12.2561	1.4939	-1.8193	-2.3745	.9355		
17	2.2350	17.7921	1.5450	.9524	3.6996	1.1400		
18	-4.5523	-5.5773	-5.6958	-6.3692	-16.2162	-7.0771		
19	-4.2605	-12.9991	-5.9179	-6.6847	-12.4587	-8.3791		
20	-2.7381	-5.1132	-4.0317	-4.3754	-7.5343	-7.4629		
21	-1.5513	-2.2422	-1.5707	-.8991	-2.0986	-4.8975		
22	1.9431	33.2419	2.8484	2.0018	7.6828	.5883		
23	2.6297	21.3805	3.6527	2.3422	16.6174	1.5026		

TABLE XV.- PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 4.11$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.7156	-1.4713	-3.4379	-2.7762	-1.5993	-1.8828		
2	-3.5910	-2.7338	-3.5902	-2.9127	-2.3041	-2.3846		
3	-3.3238	-3.3178	-3.4029	-2.9950	-2.4957	-2.4612		
4	-2.7023	-2.9920	-3.1473	-2.8217	-2.4746	-2.3156		
5	-2.4786	-2.7503	-3.0615	-2.8235	-2.5550	-2.1662		
6	-2.9199	-3.0145	-3.0248	-2.7132	-2.5301	-2.1586		
7	-3.2052	-3.4138	-3.2033	-2.8952	-2.7255	-2.3712		
8	-3.9348	-.0496	-.0123	-2.9180	-2.8538	-2.5340		
9	-.9203	.4760	.7793	-.5724	.4252	.5650		
10	-.1742	-.2493	.7531	.5867	.4080	.4597		
11	-8.9098	-23.6683	-8.7819	-6.6779	-11.4478	-7.1728		
12	-8.8257	-16.1517	-10.8440	-9.0060	-10.9115	-8.0175		
13	-7.3200	-10.7503	-8.1378	-7.0945	-8.4235	-6.3397		
14	-4.6283	-4.8925	-4.7227	-4.4269	-4.8457	-4.0930		
15	-4.7169	-5.0652	-3.4379	-5.5261	-4.4627	-1.9958		
16	-.8348	21.6083	1.9527	-.5497	-2.0456	.9653		
17	2.4910	34.8832	1.9790	1.7583	5.2231	1.3992		
18	-9.5508	-12.5202	-8.8485	-8.3899	-24.0583	-8.1995		
19	-10.2789	-26.4500	-10.5586	-8.9325	-17.1727	-9.9386		
20	-7.1098	-10.6662	-7.4324	-5.9130	-9.7719	-8.7913		
21	-2.2924	-2.7608	-2.4296	-.8770	-2.2888	-5.1062		
22	.8544		5.4045	2.1261	13.1631	.7661		
23	2.9220	36.5064	7.1331	2.1646	25.3645	2.2409		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-6.9733	-2.7198	-7.5061	-5.7002	-4.2131	-4.7988		
2	-6.5459	-4.8255	-7.3903	-5.8336	-5.1176	-5.1618		
3	-4.9023	-5.1416	-6.2267	-5.2597	-4.7796	-4.7259		
4	-3.7087	-4.5170	-5.0123	-4.5981	-4.1555	-3.9270		
5	-3.2060	-3.8773	-4.2594	-4.1137	-3.7292	-3.2895		
6	-3.3249	-3.8788	-3.9224	-3.7171	-3.4546	-3.0398		
7	-3.3475	-3.9857	-3.9452	-3.7189	-3.5007	-3.1339		
8	-3.9992	-.0632	-.0316	-3.7855	-3.5718	-3.2453		
9	.2800	1.0839	.8850	.0632	.5588	.6875		
10	-.2499	-.1716	.9060	.7726	.6471	.6529		
11	-10.3087	-22.3376	-10.2264	-5.5774	-14.0719	-8.8833		
12	-7.7379	-16.0522	-10.9213	-8.5363	-12.8295	-9.7109		
13	-6.0672	-10.8550	-8.2397	-7.1130	-9.7532	-7.6793		
14	-3.8427	-4.8075	-4.9684	-4.8227	-5.6399	-4.9832		
15	-4.3860	-4.7488	-3.9488	-5.1895	-5.2021	-2.5598		
16	.7346	20.6860	2.1509	-1.7954	-1.9894	.9774		
17	4.3763	33.0922	1.9771	1.9701	5.4306	1.4517		
18	-8.9736	-11.5399	-9.2909	-9.5875	-23.4084	-10.0086		
19	-8.5206	-25.4352	-10.2667	-9.8157	-18.1871	-11.9961		
20	-5.3026	-10.3689	-6.8708	-6.6199	-10.9323	-10.9015		
21	-2.1193	-3.3761	-2.5869	-1.3321	-3.0456	-7.0283		
22	2.5141		5.7189	3.4485	9.3922	.4052		
23	5.9494	43.5173	6.5968	3.7698	24.3033	2.1930		

TABLE XVI.- PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 5.25. FULL-SPAN FLAP;  $\delta_f = 55^\circ$ ;

$C_\mu = 2.75$ . ALL ENGINES OPERATING.

(a)  $\alpha = 1^\circ$

WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.1541	1.2219	-2.9229	-2.3285	-1.2188	-.9038		
2	-3.0577	-.6475	-3.0473	-2.4869	-1.8245	-1.2132		
3	-2.9496	-.9528	-2.9808	-2.5448	-1.9363	-1.3232		
4	-2.7100	-1.6714	-2.5482	-2.4664	-1.9381	-1.3735		
5	-2.4603	-1.9797	-1.9299	-2.4835	-2.0276	-1.4983		
6	-2.5771	-2.7159	-2.7032	-2.4681	-2.1320	-1.7779		
7	-2.6911	-2.9394	-2.9076	-2.7202	-2.4842	-2.2289		
8	-3.2520	-.0205	-.0358	-3.1120	-3.1793	-3.0693		
9	-.1330	.5247	.7585	.4534	.4214	.2666		
10	.2587	.0468	.7432	.6102	.3748	.2014		
11	-8.1952	-16.3038	-8.5184	-6.7554	-9.9572	-8.2166		
12	-8.0929	-12.2736	-9.2559	-7.8217	-8.9583	-9.5863		
13	-6.7417	-8.3924	-6.6890	-6.0451	-7.2158	-8.4514		
14	-3.6683	-4.1065	-3.8036	-4.4815	-4.0216	-5.7417		
15	-1.3179	-1.6116	-.6251	-1.9384	-1.3716	-1.6400		
16	.0877	17.2209	1.5749	-.5093	1.5215	.8186		
17	.9530	22.9022	-2.0185	.7636	6.0059	.8689		
18	-7.2165	-8.4844	-6.8968	-6.4454	-19.7094	-8.9658		
19	-7.7584	-16.9524	-7.9665	-7.4163	-14.7093	-10.7641		
20	-5.2576	-7.3479	-5.4677	-5.0759	-8.7645	-8.5539		
21	-1.7781	-2.2221	-1.7800	-1.3082	-2.6724	-4.8435		
22	1.4952	37.7041	.9392	1.0056	13.3134	.3934		
23	2.2670	25.6516	1.6005	.9647	19.2988	1.3574		

(b)  $\alpha = 16^\circ$

WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.6469	3.7133	-6.0350	-4.7791	-2.4786	-2.3083		
2	-5.3842	-.5491	-5.9187	-4.7602	-3.3866	-2.6995		
3	-4.2294	-1.1919	-5.0101	-4.2572	-3.2668	-2.6078		
4	-3.3240	-2.2910	-3.5796	-3.5437	-2.8736	-2.3364		
5	-2.6930	-2.4127	-2.4503	-3.2442	-2.6958	-2.3027		
6	-2.6417	-3.0936	-3.2425	-3.1416	-2.7257	-2.8493		
7	-2.5184	-3.1112	-3.2442	-3.2648	-3.1339	-4.6521		
8	-2.7121	-.0147	-.0291	-3.5882	-3.9033	-6.7807		
9	.4889	.9235	.8578	.5171	.4982	.1967		
10	.3245	.1879	.9126	.7602	.5338	.1442		
11	-7.1627	-16.5526	-8.9113	-6.9299	-11.1669	-13.5145		
12	-5.3857	-11.7410	-8.6821	-8.0028	-11.0677	-15.4222		
13	-4.3306	-7.6954	-6.3225	-6.2592	-8.9897	-11.8465		
14	-2.4113	-3.6248	-3.6121	-4.9502	-5.0003	-6.4998		
15	-1.5939	-2.9586	-.8350	-1.7676	-1.5725	-3.3286		
16	.3847	18.2595	1.7465	-.7169	1.1988	.6631		
17	1.6210	23.5688	-2.5461	.7465	5.8385	1.0171		
18	-5.6190	-7.7482	-6.8375	-6.9984	-19.6774	-9.3248		
19	-5.3813	-16.1124	-7.2550	-7.7529	-16.1972	-9.4596		
20	-3.1054	-7.0615	-4.7346	-5.2770	-10.4424	-7.0802		
21	-1.5015	-2.6241	-1.7128	-1.5126	-3.9108	-4.7120		
22	1.9983	34.1580	.9760	1.9862	9.3693	.3147		
23	3.2478	23.3882	1.7465	1.2602	20.8177	1.1520		

TABLE XVII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 5.25. FULL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 5.49$ . ALL ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.6329	3.0126	-3.1858	-2.3655	-1.5473	-1.2251		
2	-3.5847	-.7855	-3.4887	-2.6854	-2.3516	-1.3052		
3	-3.4709	-1.3095	-3.4445	-2.7688	-2.3535	-1.5100		
4	-3.0841	-2.1253	-2.8454	-2.7195	-2.2864	-1.5528		
5	-2.8535	-2.3982	-2.4710	-2.7961	-2.4559	-1.7409		
6	-3.0024	-3.1571	-3.1296	-2.8352	-2.5657	-2.1393		
7	-3.2564	-3.5512	-3.4223	-3.2028	-3.0778	-2.8916		
8	-4.0488	-.0336	-.0102	-3.7644	-4.0180	-4.0962		
9	-.1796	.1650	.7237	-1.5044	.2217	.2943		
10	-.2351	-.5432	.7135	.5007	.2962	.1937		
11	-10.5973	-24.7247	-10.3180	-7.7772	-12.6983	-9.9296		
12	-10.2704	-17.0349	-11.5382	-10.0202	-12.0764	-12.0317		
13	-8.5381	-11.2351	-8.4699	-8.1602	-9.6466	-10.9797		
14	-4.7931	-5.3652	-5.0288	-5.3556	-5.3772	-7.5687		
15	-5.1989	-4.2064	-1.6797	-7.6241	-2.2175	-2.5676		
16	-.8833	28.1110	2.3603	-2.1613	.7619	.8160		
17	1.4559	39.6008	-4.6068	.7680	9.8140	1.1308		
18	-10.9622	-17.1721	-9.3991	-8.6384	-28.6884	-12.3594		
19	-11.1636	-27.1444	-10.9562	-9.6305	-21.7416	-15.2249		
20	-7.8944	-11.2730	-7.6343	-6.9076	-12.2589	-12.5940		
21	-2.6594	-3.0126	-2.5051	-1.4891	-3.3533	-6.7495		
22	.8557		.7254	2.3586	18.9983	.4192		
23	3.7734		2.3092	1.2517	27.4318	1.8611		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-6.5674	4.5225	-6.9489	-5.3511	-2.5780	-2.6607		
2	-6.0464	-1.1145	-6.7841	-5.3820	-3.8830	-3.1413		
3	-4.6114	-1.9019	-5.8316	-4.8894	-3.9262	-2.9892		
4	-3.7666	-3.0617	-4.1772	-4.1875	-3.4192	-2.7790		
5	-3.4428	-3.1514	-3.2419	-3.8443	-3.3066	-2.9292		
6	-3.4340	-3.8638	-3.9352	-3.7791	-3.3366	-3.7797		
7	-3.5606	-4.0610	-4.1463	-4.0107	-3.9262	-6.0198		
8	-4.0154	-.0280	-.0086	-4.4020	-4.9664	-9.1123		
9	.6598	.3888	.8243	-.7088	.3720	.1616		
10	-.0810	-.5522	.8793	.6543	.4659	.1033		
11	-10.8356	-24.5467	-11.4968	-7.6662	-14.3097	-17.1694		
12	-8.0348	-17.0229	-11.5466	-10.0912	-14.1782	-20.0816		
13	-6.7117	-11.0284	-8.7011	-8.4231	-11.4838	-16.3432		
14	-4.1154	-5.2870	-5.4386	-5.4609	-6.6263	-9.4221		
15	-5.6373	-5.1104	-2.0234	-6.2195	-3.2840	-4.7355		
16	-.0118	30.0909	2.4060	-3.3603	1.2512	.6068		
17	2.7789	40.7014	-4.7213	-.0154	9.6170	1.2174		
18	-10.6678	-15.4158	-10.1925	-9.2022	-28.1499	-13.3108		
19	-10.0747	-25.9552	-11.2857	-10.2800	-23.4595	-13.2357		
20	-6.7337	-10.3882	-7.7898	-7.0295	-14.4054	-9.7808		
21	-2.6157	-3.5473	-2.8249	-1.8552	-5.1054	-6.0573		
22	2.2856		.8604	2.4524	13.8798	.1428		
23	5.7198		2.5297	1.3378	28.3720	1.7115		

TABLE XVIII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 1.54$ . OUTBOARD ENGINE INOPERATIVE.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.9270	-.3447	-2.8636	-2.0249	-1.8374	-1.7433		
2	-2.8608	-2.0933	-2.8952	-2.3530	-1.9987	-1.8028		
3	-2.7329	-2.7795	-2.8356	-2.5899	-2.1234	-2.0025		
4	-2.1941	-2.5252	-2.6689	-2.3706	-2.0083	-1.8259		
5	-2.1535	-2.2152	-2.4495	-2.2565	-1.8854	-1.5974		
6	-2.2889	-2.4138	-2.4022	-2.0723	-1.7683	-1.4745		
7	-2.4575	-2.6531	-2.4776	-2.1161	-1.6646	-1.4265		
8	-2.8894	-.0211	-.0228	-2.0302	-1.5628	-1.3593		
9	.3537	.8865	.7619	.5741	.4704	.3398		
10	.4199	.0512	.7057	.6144	.5011	.4109		
11	-7.4957	-15.6083	-7.2450	-6.2150	-5.1147	-4.2853		
12	-7.2820	-11.5332	-7.9328	-6.0536	-4.9227	-3.9666		
13	-5.8298	-7.8538	-5.9062	-4.0270	-3.5768	-2.9106		
14	-3.2851	-3.5590	-3.3655	-4.0515	-1.6876	-1.4438		
15	-.5238	-1.5621	-1.1985	.6021	.5587	.2246		
16	.8007	12.0817	1.4852	.9023	-1.2710	.9561		
17	2.1132	17.7471	1.4132	.5302	.6528	.7833		
18	-6.4062	-5.3468	-6.0150	-3.1567	-2.9740	-2.7205		
19	-6.2121	-16.4389	-7.0327	-2.3144	-2.8185	-2.9452		
20	-4.5974	-6.5627	-4.8903	-1.2529	-1.5955	-2.1580		
21	-1.3665	-1.8450	-1.5511	-1.1177	-.4992	-1.0905		
22	1.7113	37.1905	3.5848	-.2211	.6854	.6163		
23	2.3736	25.0636	1.2728	.3739	.6816	.6105		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.3312	-.6259	-5.7992	-4.4916	-3.8320	-4.0156		
2	-4.8976	-3.9719	-5.6348	-4.6065	-4.1026	-4.2747		
3	-3.6249	-4.1250	-4.8167	-4.1170	-3.6096	-3.7624		
4	-2.6778	-3.4112	-3.8361	-3.4456	-2.9851	-3.0161		
5	-2.4277	-2.7141	-3.0622	-2.9031	-2.5327	-2.3134		
6	-2.1580	-2.6293	-2.6540	-2.4543	-2.1538	-1.9527		
7	-2.1246	-2.5383	-2.5727	-2.3218	-1.9759	-1.7690		
8	-2.0034	-.0212	-.0247	-2.1151	-1.8135	-1.6163		
9	.6699	1.1565	.8698	.7160	.6225	.4891		
10	.6760	.2425	.8875	.8079	.7560	.6225		
11	-4.8008	-13.7461	-6.3681	-5.5801	-5.2008	-4.4139		
12	-3.6112	-9.5000	-5.9564	-5.1012	-4.2515	-4.3114		
13	-2.8865	-5.9661	-4.3980	-3.2477	-2.9561	-3.0818		
14	-1.7897	-2.5020	-2.5586	-2.7989	-1.4771	-1.5254		
15	-.0879	-1.8610	-1.4507	.7849	.3519	.3306		
16	.8943	12.1876	1.6034	.8008	-.5259	.8352		
17	1.9113	17.9502	1.4850	.4561	.7115	.7637		
18	-4.3704	-5.2630	-5.1224	-2.4649	-2.8150	-2.7415		
19	-3.5658	-13.3324	-4.8927	-2.0444	-2.3877	-2.9774		
20	-2.4247	-4.8720	-3.1434	-1.0390	-1.4191	-2.1248		
21	-1.1548	-2.1519	-1.2139	-.8888	-.7076	-1.1078		
22	2.0795	33.8589	3.4791	-.4612	.6458	.5607		
23	2.4099	21.2423	1.3807	-.1909	.8198	.6361		

TABLE XIX. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 3.08$ . OUTBOARD ENGINE INOPERATIVE.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.2847	-1.5905	-3.0783	-2.4365	-2.0362	-2.0763		
2	-3.3341	-2.4980	-3.3591	-2.7330	-2.3873	-2.1488		
3	-3.1097	-3.1157	-3.2108	-2.8533	-2.3930	-2.2060		
4	-2.5399	-2.8540	-2.9928	-2.6405	-2.2652	-1.9980		
5	-2.4875	-2.6072	-2.8411	-2.6126	-2.1335	-1.8473		
6	-2.6924	-2.8555	-2.7957	-2.4103	-1.9980	-1.7232		
7	-3.0200	-3.2055	-2.9998	-2.4731	-1.9656	-1.6583		
8	-3.7290	-1.0299	-1.0209	-2.3998	-1.8873	-1.5667		
9	-1.9678	.4787	.7364	.6212	.4675	.3359		
10	-.2723	-.2349	.6997	.6456	.5324	.4217		
11	-8.5303	-23.4264	-8.3967	-6.2402	-5.9979	-4.7975		
12	-8.3239	-15.4855	-10.1068	-6.8419	-5.8643	-4.5895		
13	-7.0316	-10.4224	-7.6215	-4.6985	-4.2880	-3.4770		
14	-4.3048	-4.5322	-4.4665	-3.5980	-2.1087	-1.8034		
15	-4.1164	-5.7991	-3.0085	.5584	.3435	.2614		
16	-.7001	21.0448	2.5738	-.1029	-1.7633	.9274		
17	2.3772	33.6161	1.9875	-.4012	.6775	.7347		
18	-9.0433	-12.0049	-8.2895	-3.5370	-3.6735	-3.1774		
19	-9.6760	-25.8465	-9.9638	-3.4184	-3.6697	-3.5953		
20	-6.7279	-10.2459	-6.9745	-1.9045	-2.2404	-2.8014		
21	-2.0986	-3.1905	-2.1871	-1.5139	-.7996	-1.4790		
22	1.2851		6.7337	-1.1058	.6278	.5763		
23	3.1791		4.7497	-1.8156	.7194	.5744		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-6.4624	-.0663	-6.8094	-5.0943	-4.3666	-4.5012		
2	-6.0630	-4.6207	-6.8094	-5.3210	-4.8223	-4.8146		
3	-4.6313	-4.8589	-5.7708	-4.7323	-4.1743	-4.1955		
4	-3.4437	-4.1792	-4.6075	-4.0997	-3.4744	-3.4168		
5	-3.1514	-3.4980	-3.8291	-3.4847	-3.0130	-2.6669		
6	-3.1061	-3.5522	-3.5057	-3.0822	-2.6284	-2.3323		
7	-3.1604	-3.6622	-3.4934	-2.9891	-2.4554	-2.1708		
8	-3.6773	-.0301	-.0158	-2.7835	-2.3419	-2.0727		
9	.0121	1.1215	.8843	.7542	.6307	.4711		
10	-.1085	-.1914	.8984	.8421	.7960	.6134		
11	-9.2821	-23.3053	-9.1904	-6.6600	-6.7470	-5.4530		
12	-7.2792	-15.7428	-9.9917	-6.7426	-6.0510	-5.5357		
13	-5.4933	-10.4968	-7.3330	-4.4916	-4.3147	-4.1839		
14	-3.5206	-4.4625	-4.4336	-2.7993	-2.2708	-2.1708		
15	-3.6803	-6.7261	-2.7501	.6153	.3403	.3384		
16	.3934	21.7603	3.0328	-.1266	.1327	.9018		
17	3.5257	35.2497	2.0394	-.0563	.6903	.7441		
18	-8.1337	-12.0400	-8.4489	-3.5128	-3.7859	-3.8821		
19	-8.1201	-26.6133	-9.4452	-3.3599	-3.6706	-4.3320		
20	-5.1979	-10.3868	-6.3771	-1.8662	-2.3708	-3.2437		
21	-2.0482	-2.9765	-2.0982	-1.3232	-.9441	-1.7363		
22	3.0102		6.4400	-1.1827	.6461	.4826		
23	4.8477	42.4662	3.9892	-1.7907	.8403	.6287		

TABLE XX. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 1.54$ . INBOARD ENGINE INOPERATIVE.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.4301	-1.5860	-2.5690	-1.9004	-1.4031	-1.3513		
2	-2.5066	-1.8011	-2.5935	-2.1303	-1.5605	-1.6757		
3	-2.2977	-2.2255	-2.4040	-2.2654	-1.8811	-1.9291		
4	-1.9275	-1.9682	-2.1777	-2.1496	-1.9655	-1.3120		
5	-3.3058	-1.7364	-2.0303	-2.0618	-1.9674	-1.6757		
6	-1.2173	-1.5529	-1.7828	-1.8934	-1.9195	-1.5893		
7	-.8291	-1.3663	-1.7144	-1.9530	-2.0173	-1.6853		
8	-.7028	-.0150	-.0211	-1.9408	-2.0269	-1.8081		
9	.6366	.6331	.6406	.5335	.4992	.5932		
10	.6351	.6005	.7161	.5721	.5318	.4550		
11	-.9721	-3.5089	-5.3239	-5.5871	-7.5511	-5.1787		
12	-.9781	-3.2471	-5.1239	-6.4101	-8.1404	-5.5894		
13	-1.2926	-1.9922	-3.3551	-4.8431	-6.1365	-4.2708		
14	-.9600	-1.1903	-1.6267	-3.9219	-3.2170	-2.6066		
15	.7585	.6441	.3299	-1.2454	-1.4933	-1.0396		
16	1.0186	.8623	.9232	.8284	-2.1152	.9830		
17	.9617	.8036	.7898	2.8730	2.9700	1.1596		
18	-.5342	-.4455	-2.7427	-6.0118	-13.7471	-5.1787		
19	-1.6988	-1.2610	-2.7602	-6.9155	-10.8161	-6.2267		
20	-.6050	-.7735	-1.6793	-4.7273	-6.2324	-5.4954		
21	-.5566	-.9149	-.7054	-1.1318	-1.3571	-3.2746		
22	1.0204	.8368	.7582	2.2535	6.6887	.6538		
23	.8368	.7465	.7863	2.8555	13.6769	1.3734		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.6179	-2.9217	-4.6950	-4.2368	-2.6920	-3.5993		
2	-3.4426	-2.8608	-4.6281	-4.1540	-3.8190	-3.8984		
3	-2.4528	-2.6432	-3.8227	-3.7134	-3.6108	-3.4373		
4	-1.6730	-2.3077	-2.8128	-3.0684	-3.0672	-2.9091		
5	-2.7866	-1.8458	-2.2577	-2.4603	-2.8917	-2.3057		
6	-1.2740	-1.5249	-1.7607	-1.9510	-2.5659	-2.0262		
7	-1.1380	-1.2771	-1.4857	-1.8840	-2.3095	-2.0801		
8	-1.1108	.0015	-.0071	-1.8875	-2.2035	-2.1727		
9	.7935	.8464	.8320	.6631	.5958	.6729		
10	.8449	.8646	.8814	.7668	.7674	.6672		
11	-.8025	-1.9208	-3.7310	-5.0475	-8.0776	-6.3919		
12	-.7565	-1.7002	-2.4691	-4.6651	-8.5210	-6.3561		
13	-1.2211	-1.6125	-1.7219	-3.6731	-6.6067	-4.8909		
14	-.8025	-1.2725	-1.6179	-2.9908	-3.3313	-2.9207		
15	.8177	.7452	.4195	-1.1914	-.9369	-1.0121		
16	1.0445	1.0082	.9554	.5958	-1.8488	1.0412		
17	.9840	.5462	.8902	2.3285	3.6323	1.2225		
18	-1.9042	-.4610	-2.7370	-5.2907	-14.0423	-5.9454		
19	-1.8876	-1.5609	-2.0462	-6.0063	-10.9539	-6.9248		
20	-1.0232	-1.2242	-1.4117	-4.2685	-6.3098	-6.0572		
21	-.7874	-1.1395	-1.0716	-1.3553	-1.4979	-3.4624		
22	.9976	.8525	.7174	2.3391	6.9242	.5418		
23	.8918	.8782	.9818	3.0142	16.1372	1.3401		

TABLE XXI. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 3.08$ . INBOARD ENGINE INOPERATIVE.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.6349	-1.9687	-2.7511	-2.3099	-1.4422	-1.5075		
2	-2.8007	-2.0727	-2.9005	-2.2536	-1.9363	-1.8287		
3	-2.5505	-2.5279	-2.6562	-2.3942	-2.1440	-1.9575		
4	-2.1194	-2.2490	-2.3832	-2.3450	-2.1959	-2.0036		
5	-3.2876	-1.9717	-2.3204	-2.2747	-2.3190	-1.8460		
6	-1.4426	-1.8330	-2.0268	-2.1517	-2.2286	-1.8517		
7	-1.0070	-1.6536	-1.9811	-2.2782	-2.4055	-2.0652		
8	-.8321	-.0045	.0070	-2.2870	-2.4478	-2.2882		
9	.6830	.7011	.6136	.4712	.4020	.6404		
10	.7011	.6935	.8176	.4308	.5174	.4885		
11	-1.2165	-4.2206	-5.4371	-7.6274	-9.6048	-6.7416		
12	-1.2025	-4.1995	-5.6920	-8.5978	-10.0221	-7.2397		
13	-1.3974	-2.7208	-3.9798	-6.5340	-7.7559	-5.7610		
14	-1.2014	-1.4185	-2.0304	-4.6637	-4.1688	-3.6227		
15	.7764	.4990	.0246	-3.5931	-3.3227	-2.3094		
16	1.0388	.9091	.6277	1.7195	-.7845	1.1463		
17	.9724	.8488	.5697	6.2433	4.5293	1.6136		
18	-.7040	-.7749	-3.1730	-8.8035	-20.2576	-7.2954		
19	-1.4758	-1.7561	-3.2398	-9.6385	-15.8542	-8.7395		
20	-.7869	-.9919	-2.0726	-6.7520	-8.8068	-7.6281		
21	-.6904	-1.0959	-1.0460	-1.2727	-1.6836	-4.0996		
22	.9996	.7975	.0141	4.9387	8.6773	.4347		
23	.8970	.7930	.7226	5.7809	22.2541	2.0329		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.4354	-3.4565	-5.0466	-4.6688	-3.0369	-3.8711		
2	-3.3345	-3.2486	-4.9974	-4.7005	-4.2498	-4.3690		
3	-2.3626	-2.9925	-3.9730	-4.1364	-4.1229	-3.3692		
4	-1.9227	-2.5148	-3.1647	-3.4107	-3.5751	-3.1984		
5	-2.0251	-2.0960	-2.5391	-2.9169	-3.2042	-2.6660		
6	-1.6274	-1.7856	-2.2158	-2.4671	-3.0466	-2.4449		
7	-1.5385	-1.6846	-2.1192	-2.5567	-2.9870	-2.5929		
8	-1.5234	-.0060	-.0035	-2.4073	-2.8659	-2.6737		
9	.8243	.8515	.8700	.6380	.6460	.3036		
10	.8922	.8922	.9546	.6714	.7594	.6940		
11	-1.1211	-2.7695	-5.4596	-7.3450	-11.6711	-7.9614		
12	-1.0879	-1.8714	-4.0960	-6.9286	-11.3040	-8.3766		
13	-1.3320	-1.7027	-2.7166	-5.6019	-8.4150	-6.6301		
14	-1.1301	-1.4330	-1.8486	-3.3755	-4.4766	-4.0384		
15	.8032	.4416	.0334	-2.4302	-5.5588	-2.7832		
16	1.0353	.9404	.8928	1.4675	-1.5915	1.0295		
17	.9731	.9555	.9473	5.5009	5.1023	1.6091		
18	-2.3657	-.6872	-3.4564	-9.1092	-20.0650	-8.1671		
19	-1.9513	-2.1095	-2.8115	-11.0456	-15.7383	-9.7778		
20	-1.3516	-1.5927	-2.0366	-7.9495	-9.1762	-8.3689		
21	-1.0985	-1.4420	-1.5054	-1.9804	-2.0355	-4.9360		
22	.9660	.7535	.0984	6.1160	6.0866	-.0269		
23	.9359	.8861	1.1916	6.6116	22.3643	1.8129		



TABLE XXII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 35^\circ$ ;

$C_\mu = 1.03$ . INBOARD ENGINES OPERATING.

(a)  $\alpha = 1^\circ$

WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-1.9549	-1.3783	-1.9104	-1.4176	-1.2803	-1.2432		
2	-1.9607	-1.6238	-2.0612	-1.6005	-1.5878	-1.2933		
3	-1.9811	-1.9056	-2.0324	-1.8867	-1.6471	-1.4452		
4	-1.7995	-1.7763	-1.8207	-1.8444	-1.5823	-1.4137		
5	-1.6441	-1.7400	-1.8071	-1.7224	-1.4507	-1.2377		
6	-1.7327	-1.7981	-1.7292	-1.5632	-1.3099	-1.1284		
7	-1.7124	-1.8475	-1.7648	-1.5040	-1.2117	-.9616		
8	-1.5709	-.0102	-.0186	-1.4447	-1.1209	-.8560		
9	.4241	.5258	.5708	.4200	.3538	.2186		
10	.4488	-3.8983	.5250	.4624	.3890	.3242		
11	-3.9563	-8.7231	-3.8700	-3.5990	-3.0682	-3.2276		
12	-4.3529	-7.0137	-4.6406	-3.9089	-3.6167	-2.5550		
13	-4.0043	-5.1459	-3.4991	-3.0994	-2.2345	-1.6416		
14	-1.8373	-2.0174	-1.9341	-2.3220	-.9505	-.6948		
15	.2411	3.6993	.2117	.6961	-.1167	.5483		
16	.6550	11.8356	1.0518	.8943	-.7393	.8800		
17	.7916	15.2256	1.0044	.8282	.5261	.7188		
18	-2.4095	-4.3078	-2.3592	-1.8122	-1.1710	-1.2618		
19	-3.5744	-10.6171	-3.8412	-2.0307	-1.5767	-1.6082		
20	-3.0181	-4.7682	-2.9757	-1.2177	-1.1524	-1.2488		
21	-1.1430	-1.7385	-1.0331	-.4641	-.2835	-.6763		
22	.7596	37.3646	1.4837	.7164	.5113	.8985		
23	.9034	21.3053	1.0281	.6944	.4817	.5706		

(b)  $\alpha = 16^\circ$

WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-4.6562	-3.0744	-4.8592	-4.0718	-3.4118	-3.5613		
2	-4.4365	-3.2589	-4.9138	-4.0496	-3.5837	-3.7313		
3	-3.6588	-3.7320	-4.1487	-3.6124	-3.1745	-3.3091		
4	-2.7551	-2.9733	-3.0521	-2.9070	-2.6252	-2.6308		
5	-2.1428	-2.4885	-2.6525	-2.3792	-2.1450	-2.0011		
6	-1.9744	-2.2996	-2.2648	-2.0444	-1.7676	-1.6274		
7	-1.9012	-2.1560	-2.0837	-1.8719	-1.5359	-1.3285		
8	-1.9422	-.0190	-.0034	-1.6806	-1.3957	-1.1323		
9	.6269	.7734	.7481	.6063	.5231	.3830		
10	.7221	-4.0469	.7840	.7088	.5997	.5511		
11	-3.6808	-10.4491	-3.9830	-3.9403	-3.6547	-3.7949		
12	-2.8536	-7.7555	-4.7311	-3.8327	-3.6080	-3.0942		
13	-3.3073	-5.3300	-3.3886	-2.6696	-2.2011	-2.1487		
14	-1.4867	-1.8733	-1.8736	-2.3741	-.9679	-.8502		
15	.3837	6.1400	.2921	.7139	.3232	.4913		
16	.5361	13.9746	1.1119	.9035	-.0504	.8837		
17	.8275	15.6927	.8728	.7584	.6819	.7323		
18	-2.2249	-3.7730	-2.4851	-1.7302	-1.5116	-1.3864		
19	-2.7888	-10.4491	-3.6329	-1.9949	-1.7508	-1.8685		
20	-2.4050	-4.4551	-2.6252	-1.2946	-1.4070	-1.4985		
21	-1.0619	-1.7635	-.9582	-.3860	-.5026	-.7493		
22	1.1205	32.7241	1.7763	.5449	.6875	.7137		
23	1.1630	18.9501	1.1290	.6508	.6931	.4241		

TABLE XXIII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 35^\circ$ ; $C_\mu = 2.05$ . INBOARD ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-1.7194	-2.3599	-1.8001	-1.5309	-1.4265	-1.2968		
2	-2.0607	-1.8537	-2.2370	-1.6985	-1.7173	-1.4117		
3	-2.2103	-2.0433	-2.3132	-2.0169	-1.8359	-1.5691		
4	-1.8603	-1.9140	-1.9237	-2.0440	-1.6599	-1.5858		
5	-1.7993	-1.9271	-1.9881	-1.9525	-1.5710	-1.3820		
6	-1.9315	-2.0229	-1.8814	-1.7341	-1.3876	-1.2320		
7	-1.9358	-2.1420	-1.9864	-1.6697	-1.3005	-1.0708		
8	-2.3628	-.0116	-.0152	-1.6003	-1.2394	-.9615		
9	.1394	.1626	.5453	.4403	.3371	.2019		
10	.1162	-7.6213	.4793	.4776	.3723	.3149		
11	-4.6849	-13.5652	-3.9457	-3.6189	-3.1901	-3.4291		
12	-4.8374	-9.1534	-5.2496	-4.1150	-3.1660	-2.7103		
13	-4.2957	-6.3593	-4.2387	-3.0448	-2.4083	-1.8748		
14	-2.3599	-2.4426	-2.5639	-2.5656	-1.0726	-.7577		
15	-.8659	4.8141	-.1389	.6198	-.1019	.6076		
16	.7130	20.6419	.8434	.7502	-.2779	.9280		
17	.7523	26.9910	.2930	.5385	.5279	.7354		
18	-2.8667	-8.4577	-3.0837	-1.9034	-1.3950	-1.4024		
19	-3.8876	-16.5466	-5.1057	-2.3048	-1.7822	-1.7470		
20	-4.0357	-6.7703	-4.0253	-1.5851	-1.3135	-1.3950		
21	-1.5873	-2.2916	-1.4140	-.5741	-.3687	-.7947		
22	.7116		1.7849	.2472	.4834	.9336		
23	1.2823		1.3141	.0881	.4946	.5946		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.0565	-.3276	-5.2025	-4.3943	-3.6723	-3.8358		
2	-4.7236	-3.4903	-5.2059	-4.3773	-3.8321	-4.0735		
3	-3.9912	-3.9766	-4.4911	-3.8612	-3.4197	-3.5089		
4	-3.0928	-.8562	-3.5233	-3.1565	-2.8531	-2.7919		
5	-2.4448	-2.4627	-2.9986	-2.6284	-2.3758	-2.1622		
6	-2.3734	-2.6530	-2.5962	-2.3109	-1.9634	-1.7962		
7	-2.3239	-2.6326	-2.4705	-2.1836	-1.7256	-1.5139		
8	-2.5860	-.0189	-.0221	-2.0002	-1.6030	-1.3356		
9	.2228	.4106	.7166	.6249	.5145	.3882		
10	.4179	-3.3752	.7675	.7505	.6147	.5683		
11	-4.8677	-15.0022	-4.5268	-4.1532	-4.0531	-4.1813		
12	-4.8168	-10.8916	-5.7731	-4.4113	-3.5441	-3.5497		
13	-4.0072	-7.1538	-4.5573	-3.1514	-2.7045	-2.5578		
14	-2.4666	-2.5627	-2.7762	-1.2820	-1.2315	-1.0866		
15	-.5926	4.8474	.1121	.8082	.2934	.4643		
16	.5402	22.7865	.8473	.7318	.0371	.9082		
17	1.0062	28.1042	-.0374	.4822	.7002	.7299		
18	-3.0491	-7.8994	-3.6048	-1.9679	-1.8148	-1.6253		
19	-4.0698	-17.3567	-5.4640	-2.4145	-2.2699	-2.2755		
20	-3.6650	-7.1713	-4.0038	-1.5859	-1.8464	-1.8687		
21	-1.5245	-2.3516	-1.4467	-.6215	-.6483	-.9845		
22	1.1838		2.1208	.0357	.6742	.7058		
23	1.2683	41.1713	1.3703	-.1019	.7392	.5052		

TABLE XXIV. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 1.03$ . INBOARD ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.8882	.0392	-2.7723	-2.0832	-1.8249	-1.8287		
2	-2.5726	-2.0124	-2.9182	-2.2941	-2.0114	-1.7576		
3	-2.7480	-2.6531	-2.8057	-2.4629	-2.1172	-1.8902		
4	-2.1285	-2.4059	-2.5666	-2.2730	-1.9979	-1.7576		
5	1.9449	-2.1813	-2.4084	-2.1904	-1.8595	-1.5633		
6	-2.2898	-2.3802	-2.3451	-2.0251	-1.7364	-1.4441		
7	-2.3652	-2.6003	-2.3926	-2.0462	-1.6441	-1.3864		
8	-2.8189	-.0211	.0018	-1.9390	-1.5287	-1.3038		
9	-.2834	.7538	.7560	.5908	.4481	.3424		
10	.0347	-.0724	.6980	.6189	.5058	.3924		
11	-6.5572	-15.5412	-7.0862	-6.1176	-4.9054	-4.1920		
12	-6.9295	-11.3959	-7.9406	-5.8574	-4.9804	-3.8940		
13	-5.8759	-7.8596	-5.7432	-3.8903	-3.5017	-2.8998		
14	-3.2605	-3.5786	-3.2557	-3.6829	-1.6210	-1.4384		
15	-1.6914	-1.7908	-1.1145	.5697	.5539	.2270		
16	-.1070	11.4297	1.8092	.9846	.9847	.9559		
17	.6558	17.4062	1.4470	.7560	.6501	.7751		
18	-6.2994	-7.6330	-5.7977	-3.0324	-2.8883	-2.6710		
19	-7.1797	-16.1049	-6.8665	-2.2765	-2.7863	-2.8844		
20	-4.7122	-7.0426	-4.8115	-1.2429	-1.5422	-2.0979		
21	-1.5135	-1.8798	-1.5329	-1.0706	-.4827	-1.0595		
22	1.3539	38.6178	3.0207	.0844	.6885	.6462		
23	2.1092	26.3750	1.1815	.4976	.6828	.6385		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.3782	-.0136	-5.8483	-4.4233	-3.7955	-3.8766		
2	-4.8740	-4.0382	-5.6841	-4.5875	-4.1316	-4.2069		
3	-4.0246	-4.0201	-4.8842	-4.0101	-3.6796	-3.7028		
4	-2.7028	-3.4159	-3.8194	-3.3850	-2.9437	-2.9668		
5	-.5315	-2.6937	-3.2367	-2.8341	-2.5554	-2.2831		
6	-2.3167	-2.6528	-2.7335	-2.4368	-2.1962	-1.9412		
7	-2.3712	-2.6574	-2.7123	-2.3256	-2.0397	-1.7674		
8	-2.6301	-.0273	-.0212	-1.9918	-1.8948	-1.5298		
9	.3725	1.1676	.8901	.7312	.6259	.4984		
10	.3589	.1954	.9060	.8424	.7419	.6201		
11	-5.7053	-14.5130	-6.5635	-6.0125	-5.1804	-4.5140		
12	-4.2063	-10.2159	-6.1185	-5.2815	-4.3344	-4.3518		
13	-3.3569	-6.5865	-4.9266	-3.3003	-3.2913	-3.1291		
14	-2.1885	-2.9117	-2.3977	-3.3427	-1.6689	-1.6283		
15	-1.1130	-1.5717	-1.1760	.7630	.3709	.3246		
16	.6224	11.6217	2.0081	.8848	1.0259	.8404		
17	1.4629	17.6915	1.4729	.5351	.7187	.7013		
18	-4.9149	-6.3321	-5.1120	-2.4474	-2.6829	-2.7409		
19	-4.5152	-14.2222	-5.2444	-1.9495	-2.4627	-2.9842		
20	-2.8391	-5.9279	-3.3586	-1.0171	-1.4429	-2.1614		
21	-1.3628	-2.0623	-1.2025	-.8476	-.6258	-1.0720		
22	2.2944	33.5703	3.1419	-.3179	.7013	.6086		
23	2.8532	21.8895	1.1020	.0318	.7998	.6839		

TABLE XXV.- PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 7. PARTIAL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 2.05$ . INBOARD ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.3350	.2782	-3.1005	-2.2318	-1.9953	-1.8421		
2	-3.2970	-2.4975	-3.1200	-2.7335	-2.1330	-2.0962		
3	-3.0766	-3.0751	-3.0189	-2.8026	-2.2455	-2.1233		
4	-2.4473	-2.7863	-2.8540	-2.6484	-2.1543	-2.0166		
5	6.9069	-2.5568	-2.7211	-2.5651	-2.0457	-1.8092		
6	-2.6723	-2.8000	-2.7016	-2.3400	-1.9391	-1.6366		
7	-2.8471	-3.1876	-2.8789	-2.4534	-1.8906	-1.6191		
8	-3.5479	-.0410	-.0124	-2.3861	-1.8324	-1.5435		
9	-.5868	.7875	.7571	.6347	.5043	.3297		
10	-.7267	-.4363	.6791	.6454	.5372	.4209		
11	-9.5170	-21.1134	-8.1083	-6.5288	-5.8114	-4.7992		
12	-9.1082	-14.8928	-9.7002	-6.9614	-5.6990	-4.5879		
13	-7.4392	-10.2740	-7.4081	-4.7934	-4.1632	-3.5117		
14	-4.3337	-4.6073	-4.3449	-3.0951	-2.0380	-1.7762		
15	-4.0996	-7.6520	-2.4641	.7252	.5120	.3026		
16	.0471	17.5782	2.5904	.1383	2.7502	.9639		
17	1.5173	31.1929	2.0833	-.2766	.6846	.7448		
18	-9.4152	-15.5531	-7.8619	-3.5401	-3.6028	-3.0987		
19	-9.9259	-25.9183	-9.6417	-3.2937	-3.5543	-3.5505		
20	-7.3023	-10.6024	-6.8089	-1.8613	-2.1989	-2.7826		
21	-2.3850	-2.6930	-2.2283	-1.5157	-.7621	-1.4659		
22	1.5295		5.0584	-1.2054	.6381	.5857		
23	3.8814		2.0389	-1.6291	.7312	.6206		

(b)  $\alpha = 16^\circ$ 

WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-6.3136	.7865	-6.5667	-5.0206	-4.2126	-4.4245		
2	-5.9341	-4.5260	-6.4707	-5.2356	-4.6209	-4.7861		
3	-4.4956	-4.7089	-5.5430	-4.6633	-4.0591	-4.1640		
4	-3.3313	-4.0460	-4.4910	-3.9880	-3.4137	-3.3612		
5	-1.2695	-3.3862	-3.7765	-3.4549	-2.9724	-2.6419		
6	-3.0509	-3.4669	-3.4211	-3.0319	-2.6069	-2.2900		
7	-3.0783	-3.5386	-3.4353	-2.9182	-2.4358	-2.1228		
8	-3.3785	-.0168	-.0213	-2.6978	-2.2861	-2.0043		
9	.0381	1.2194	.8692	.7465	.6339	.4589		
10	-.2774	-.5014	.8816	.8372	.7661	.6241		
11	-9.2409	-22.0279	-8.9677	-6.6982	-6.6135	-5.3829		
12	-7.4595	-15.3335	-9.5613	-6.5845	-5.8048	-5.3985		
13	-5.8229	-10.2818	-7.3522	-4.5105	-4.3060	-4.1874		
14	-3.7900	-4.4559	-4.4927	-2.8950	-2.2648	-2.1462		
15	-3.9561	-6.4538	-2.1255	.7039	.3539	.2975		
16	.6203	19.7063	2.0406	.0587	1.8024	.8944		
17	1.9506	32.4379	3.1248	-.3324	.6922	.7311		
18	-8.7289	-15.0622	-8.2159	-3.5171	-3.8569	-3.8452		
19	-7.9624	-25.7919	-9.1827	-3.2665	-3.6897	-4.2340		
20	-5.3733	-10.3656	-6.1313	-1.8074	-2.3056	-3.2640		
21	-2.1351	-2.9031	-2.2037	-1.3507	-.9234	-1.7049		
22	2.2345	999.0000	4.7210	-1.1427	.6066	.4822		
23	4.6336	999.0000	1.2887	-1.3216	.8205	.6475		

TABLE XXVI. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 5.25. FULL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 1.38$ . INBOARD ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-2.8472	2.1313	-2.5696	-1.7577	-1.3277	-.9089		
2	-2.7766	-.0707	-2.7670	-2.1439	-1.5568	-1.0817		
3	-2.6838	-.4389	-2.6794	-2.2812	-1.6770	-1.1399		
4	-2.5675	-1.2781	-2.3859	-2.1799	-1.7277	-1.1794		
5	-2.2201	-1.6534	-1.5122	-2.1937	-1.6038	-1.2489		
6	-2.3409	-2.4542	-2.3790	-2.1473	-1.5568	-1.2808		
7	-2.4807	-2.7030	-2.5919	-2.2177	-1.7578	-1.5230		
8	-2.9915	-.0088	-.0103	-2.3619	-2.0658	-2.0902		
9	.0383	.6127	.7351	.5222	.3570	.0695		
10	.2327	-.0560	.6785	.5668	.4303	.1691		
11	-8.1318	-16.1808	-7.8563	-6.1244	-5.1888	-5.7147		
12	-7.8933	-11.8354	-8.3369	-5.9630	-4.9597	-6.3832		
13	-6.4095	-8.0626	-6.1141	-4.0698	-4.1560	-5.6621		
14	-3.4787	-3.8350	-3.5136	-2.9180	-2.2442	-3.2902		
15	-1.2972	-2.9620	-.4875	.4638	.0225	-.1991		
16	.2327	16.9207	1.5167	1.0271	1.5840	.5938		
17	.8911	23.2159	-1.9843	.8674	.5994	.4040		
18	-6.7834	-8.2922	-6.3596	-3.5428	-3.6207	-4.4508		
19	-6.3271	-16.5930	-7.2487	-2.6657	-3.8029	-5.3804		
20	-4.9699	-7.1485	-4.8971	-1.3732	-2.4770	-3.6733		
21	-1.6578	-1.8271	-1.4745	-1.2290	-.8826	-1.6564		
22	1.3654	38.1261	.9310	.2972	.3626	.1409		
23	2.1225	24.8641	1.6146	.9962	.7234	.5036		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.2178	2.4502	-5.2780	-4.1591	-2.8677	-2.1245		
2	-5.0021	-.2525	-5.3242	-4.1232	-3.1185	-2.4240		
3	-4.1320	-.6841	-4.5834	-3.6767	-2.8358	-2.2387		
4	-3.0756	-1.9033	-3.2045	-3.0881	-2.4053	-1.9898		
5	-2.5078	-2.0588	-1.9145	-2.8075	-2.1901	-1.8700		
6	-2.4286	-2.8658	-2.8674	-2.5013	-2.1676	-2.1245		
7	-2.5166	-2.8731	-2.9513	-2.5253	-2.3417	-3.1952		
8	-2.6985	-.0147	-.0051	-2.6159	-2.7198	-4.4737		
9	.4492	.8486	.8389	.6129	.3615	-.0187		
10	.2569	.1057	.8492	.7293	.4382	.1180		
11	-6.5749	-16.1705	-7.8786	-6.4089	-6.4691	-8.1575		
12	-5.6447	-11.0998	-7.9675	-6.1814	-6.0086	-8.5543		
13	-4.4357	-7.4230	-5.6579	-4.2755	-5.1607	-6.9127		
14	-2.4785	-3.5671	-3.3311	-2.8520	-2.7778	-3.6014		
15	-1.0597	-2.0354	-.6484	.5872	-.3107	-.8760		
16	.3773	18.1163	1.7326	1.0734	1.7193	.3259		
17	1.2846	22.9037	-2.5133	.8012	.6555	.3839		
18	-5.3014	-7.3966	-6.1027	-3.6236	-4.5392	-5.4040		
19	-4.7277	-15.1757	-6.6142	-2.7802	-4.5692	-5.1288		
20	-3.1519	-6.5808	-4.1951	-1.5877	-2.6299	-3.2252		
21	-1.3707	-1.5805	-1.3755	-1.2592	-1.3047	-1.9205		
22	1.9775	33.0101	.9159	-.2327	.2341	-.4006		
23	2.7145	21.0569	1.7154	.4486	.5394	.7023		

TABLE XXVII. - PRESSURE COEFFICIENTS FOR WING AND FLAP OF MODEL.

WING ASPECT RATIO = 5.25. FULL-SPAN FLAP;  $\delta_f = 55^\circ$ ; $C_\mu = 2.75$ . INBOARD ENGINES OPERATING.(a)  $\alpha = 1^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-3.2520	2.8398	-2.9942	-2.0518	-1.5867	-1.0180		
2	-3.2301	-.0673	-3.1969	-2.3858	-1.8682	-1.2082		
3	-3.0679	-.5469	-3.0351	-2.5034	-1.9502	-1.2809		
4	-2.7581	-1.5421	-2.5374	-2.4829	-1.8645	-1.3629		
5	-2.5286	-1.9397	-1.7876	-2.4880	-1.8365	-1.4655		
6	-2.7157	-2.8487	-2.7556	-2.4165	-1.8085	-1.4972		
7	-2.9144	-3.2506	-3.0402	-2.6465	-2.0528	-1.7750		
8	-3.7036	-.0132	.0102	-2.8629	-2.4891	-2.4219		
9	-.2764	.2208	.7128	.5355	.3003	.0243		
10	-.2968	-1.0584	.6702	.6088	.4011	.1362		
11	-9.9234	-24.1987	-9.3846	-6.8932	-6.0987	-6.5126		
12	-9.6429	-16.1944	-10.2469	-7.5016	-6.5237	-7.5604		
13	-7.7635	-10.5811	-7.6106	-5.2487	-4.9688	-6.7605		
14	-4.3729	-4.7164	-4.5176	-2.4556	-2.7575	-4.2025		
15	-4.6082	-7.1336	-1.4008	.7264	-.1361	-.4605		
16	-.8553	25.2891	2.1845	.8867	1.9159	.4552		
17	1.1391	36.6834	-4.1035	.2728	.6100	.2910		
18	-9.8460	-17.2028	-8.3945	-4.4188	-4.3647	-5.9271		
19	-10.1134	-26.9623	-9.9248	-4.1257	-4.7506	-7.0588		
20	-7.2987	-10.9172	-6.8813	-2.4727	-3.2796	-5.1254		
21	-2.4278	-2.6821	-2.1659	-1.3497	-1.2268	-2.3660		
22	.7589		.8748	-1.1537	.1865	-.2592		
23	3.3575		2.2919	-1.3633	.3078	.2462		

(b)  $\alpha = 16^\circ$ 

## WING STATIONS

TUBE	1	2	3	4	5	6	7	8
1	-5.9385	3.8441	-6.0684	-4.6955	-3.2906	-2.5022		
2	-5.6728	-.3423	-6.0941	-4.6716	-3.5978	-2.7344		
3	-4.4705	-.9546	-5.1731	-4.2128	-3.2026	-2.6033		
4	-3.5838	-2.3712	-3.7027	-3.6411	-2.7363	-2.3523		
5	-3.1830	-2.5547	-2.4359	-3.3535	-2.5715	-2.2980		
6	-3.1316	-3.4796	-3.5024	-3.0197	-2.5715	-2.7475		
7	-3.3357	-3.6763	-3.6924	-3.1172	-2.8337	-4.2589		
8	-3.9479	-.0250	-.0103	-3.2970	-3.3356	-6.0756		
9	.3643	.2703	.8411	.5704	.3186	-.1798		
10	-.3173	-.8973	.8411	.7383	.4460	.0169		
11	-10.4395	-24.5516	-10.3908	-7.6125	-7.8736	-10.7522		
12	-8.6646	-16.5817	-10.7982	-8.0267	-7.5851	-12.4602		
13	-6.8502	-10.8432	-7.8692	-5.5891	-6.6599	-10.1791		
14	-4.0095	-5.1443	-4.8855	-3.4716	-3.6989	-5.5343		
15	-5.2397	-5.6082	-1.6502	.8239	-.5356	-1.5845		
16	-.3878	28.7979	2.2543	.8394	1.2162	.2492		
17	2.2460	41.0751	-4.6613	-.0205	.5959	.3448		
18	-10.1092	-16.9208	-9.1480	-4.6082	-5.8621	-7.8698		
19	-9.6409	-26.8197	-10.1853	-4.4798	-6.1880	-8.1676		
20	-6.4097	-10.8711	-6.7874	-2.7954	-3.9742	-4.7777		
21	-2.4196	-2.8880	-2.2887	-1.5184	-1.7474	-2.8280		
22	2.1226		.8753	-1.5167	.0487	-.6349		
23	5.0927		2.4598	-1.8162	-.0225	.1087		

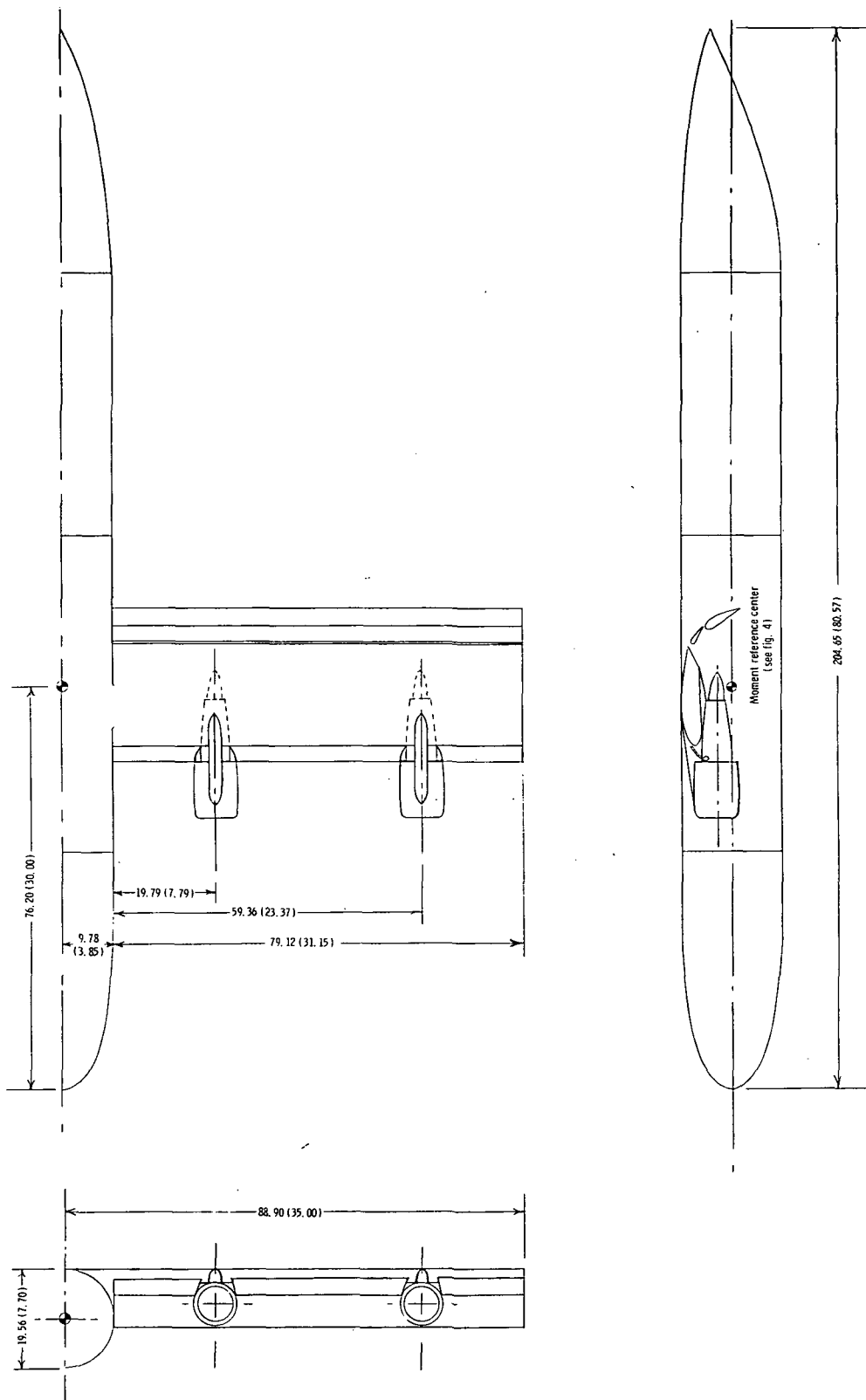
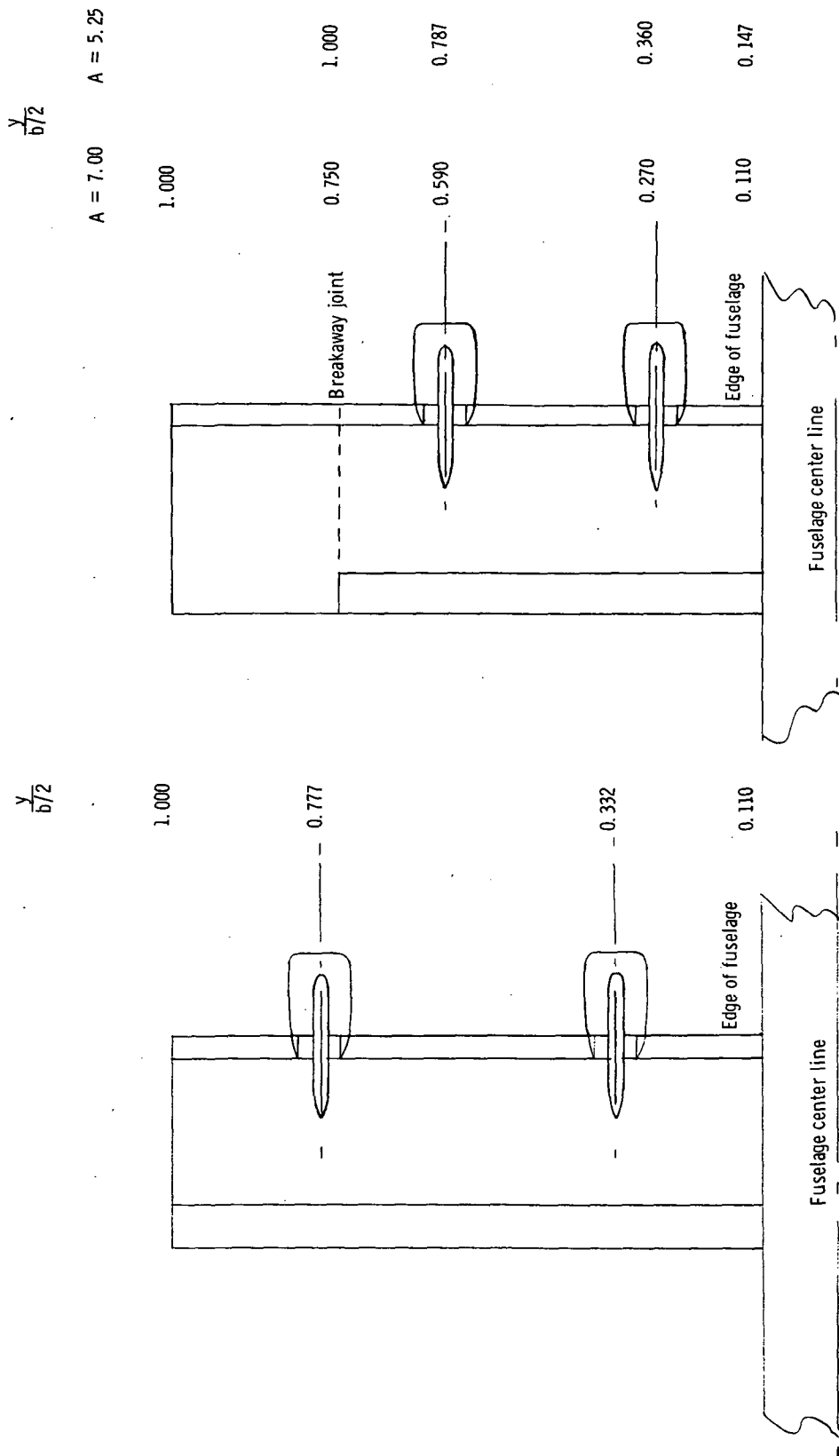


Figure 1.- Three-view drawing of model used in investigation in the aspect-ratio-7 full-span-flap configuration.  
Dimensions are in centimeters (in.).



Wing aspect ratio = 7.00, partial-span flap

Wing aspect ratio = 7.00, full-span flap

Wing aspect ratio = 5.25, full-span flap

Figure 2.- Spanwise engine locations used in investigation.



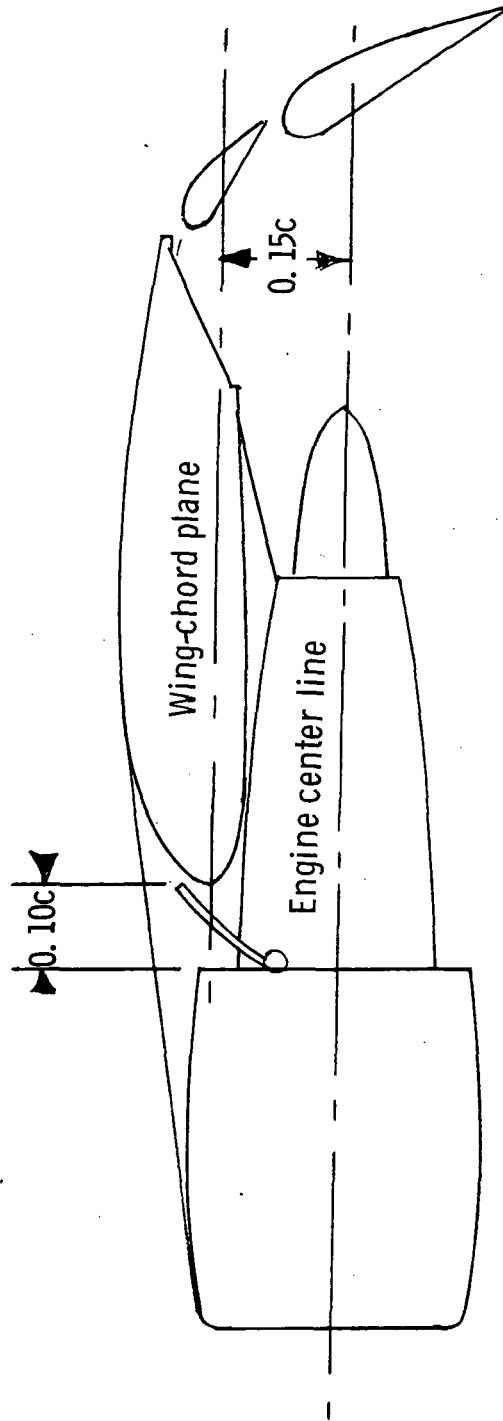


Figure 3.- Engine position used in the investigation.

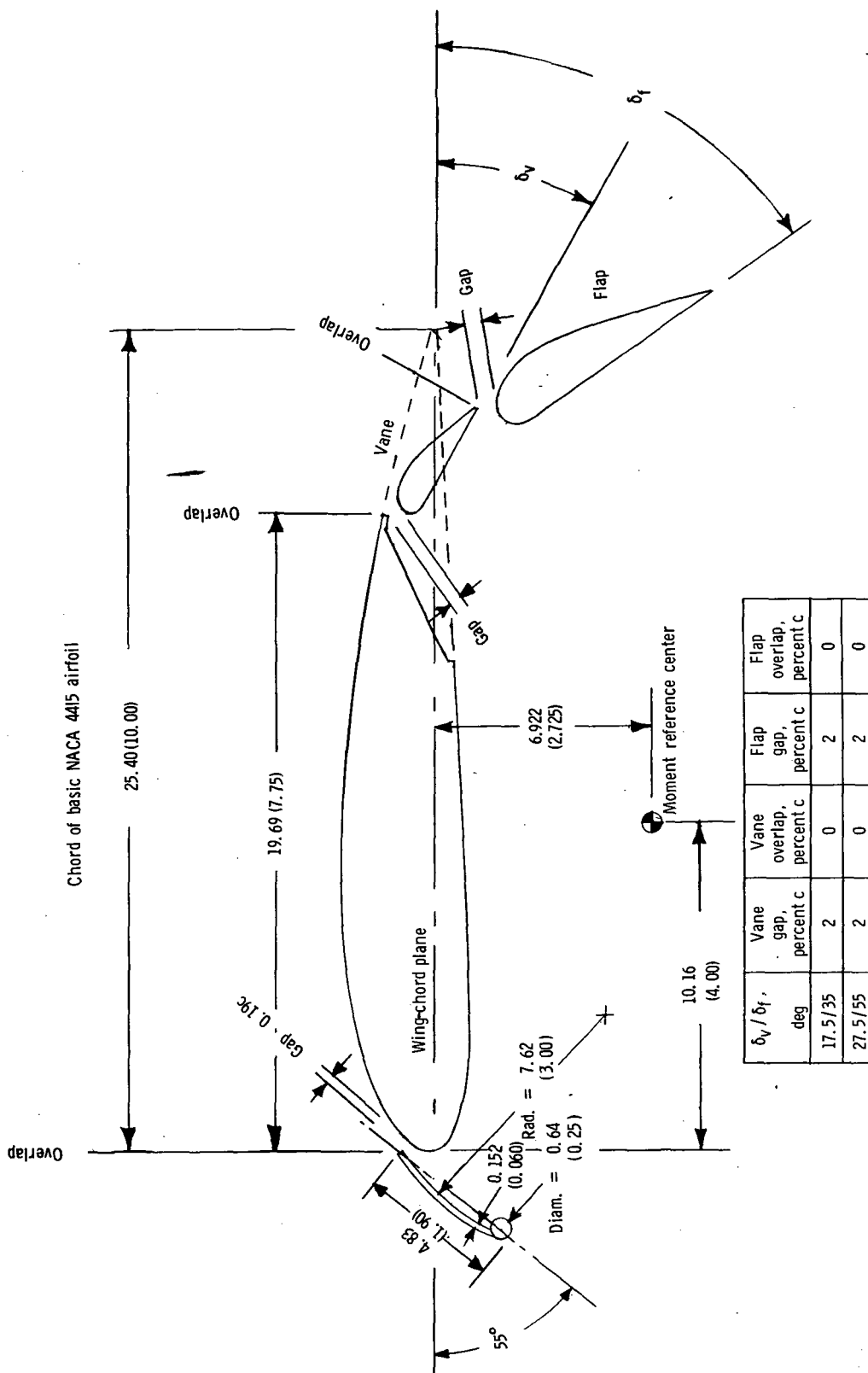


Figure 4.- Details of slats and flaps. Dimensions are in centimeters (in.).

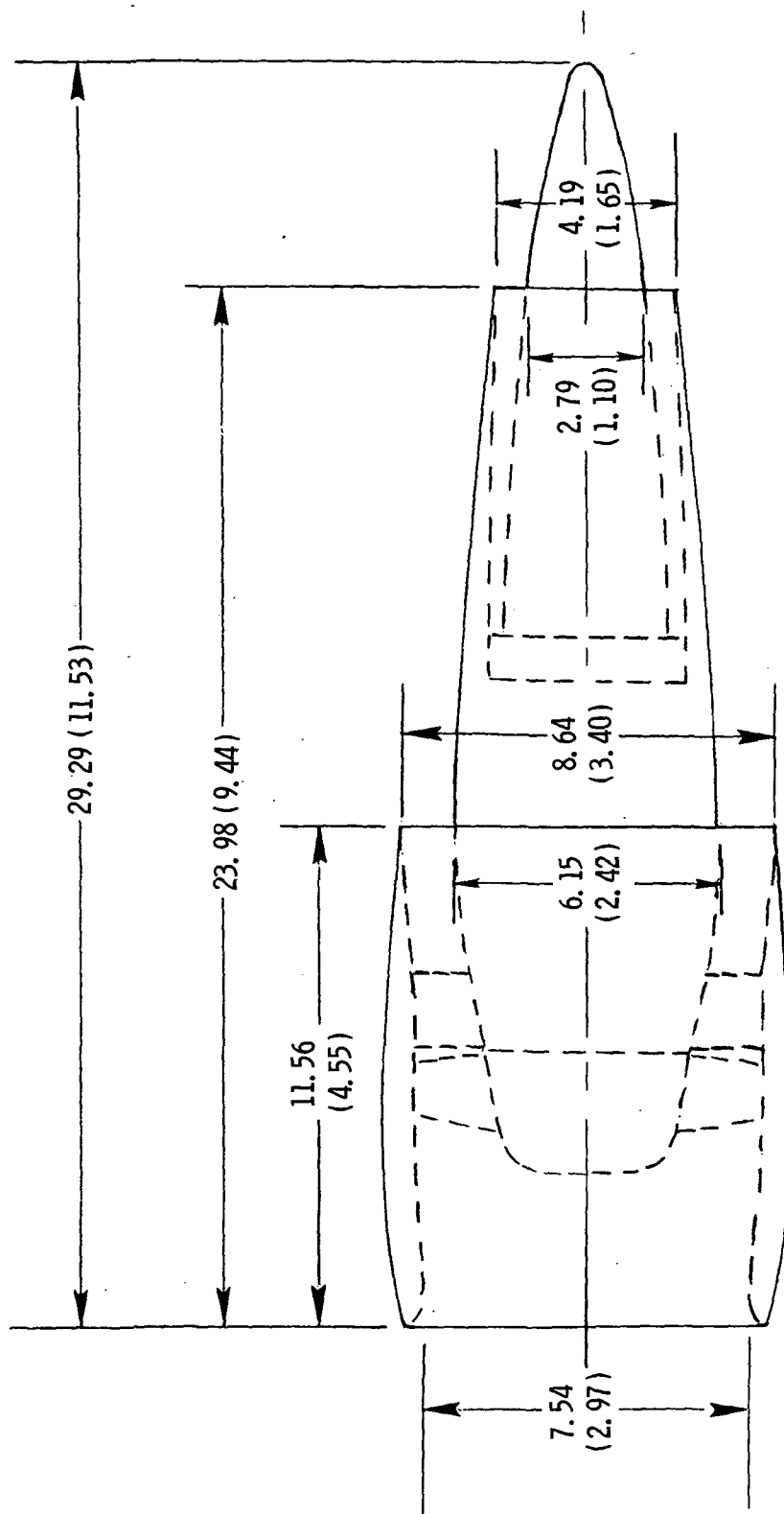


Figure 5.- Basic engine. Dimensions are in centimeters (in.).

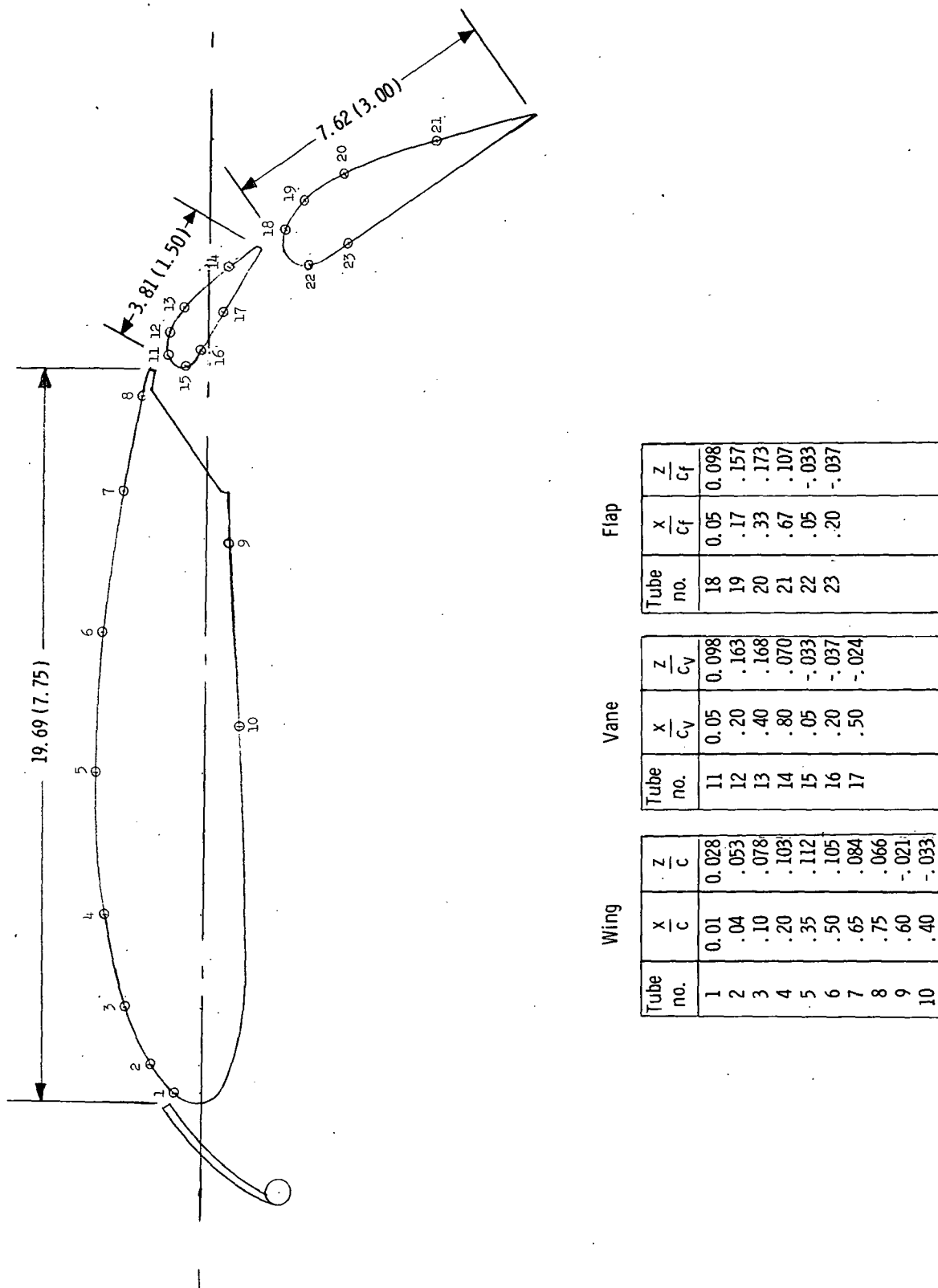


Figure 6.- Chordwise location of pressure orifices. Dimensions are in centimeters (in.).

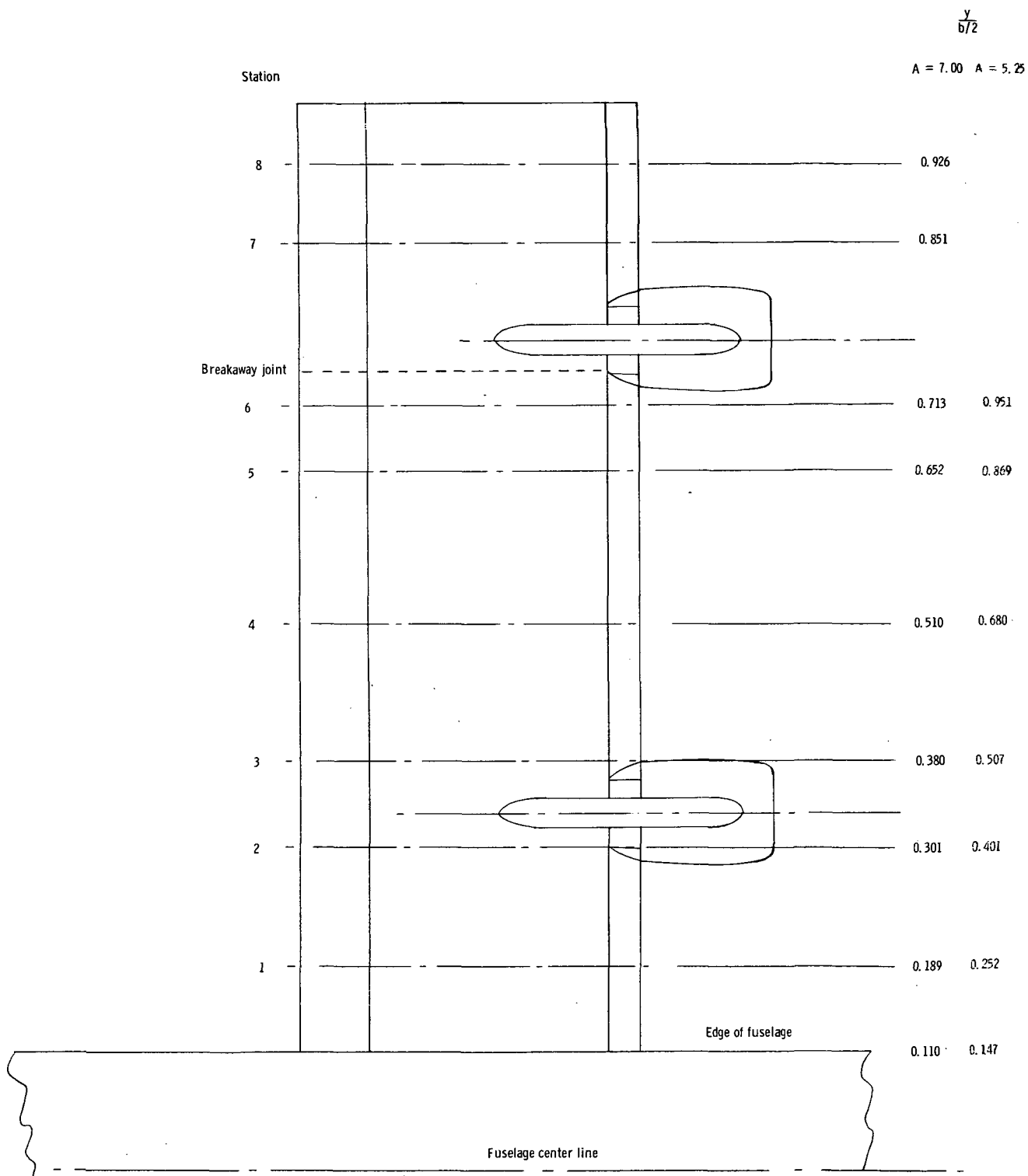


Figure 7.- Spanwise location of pressure orifices.

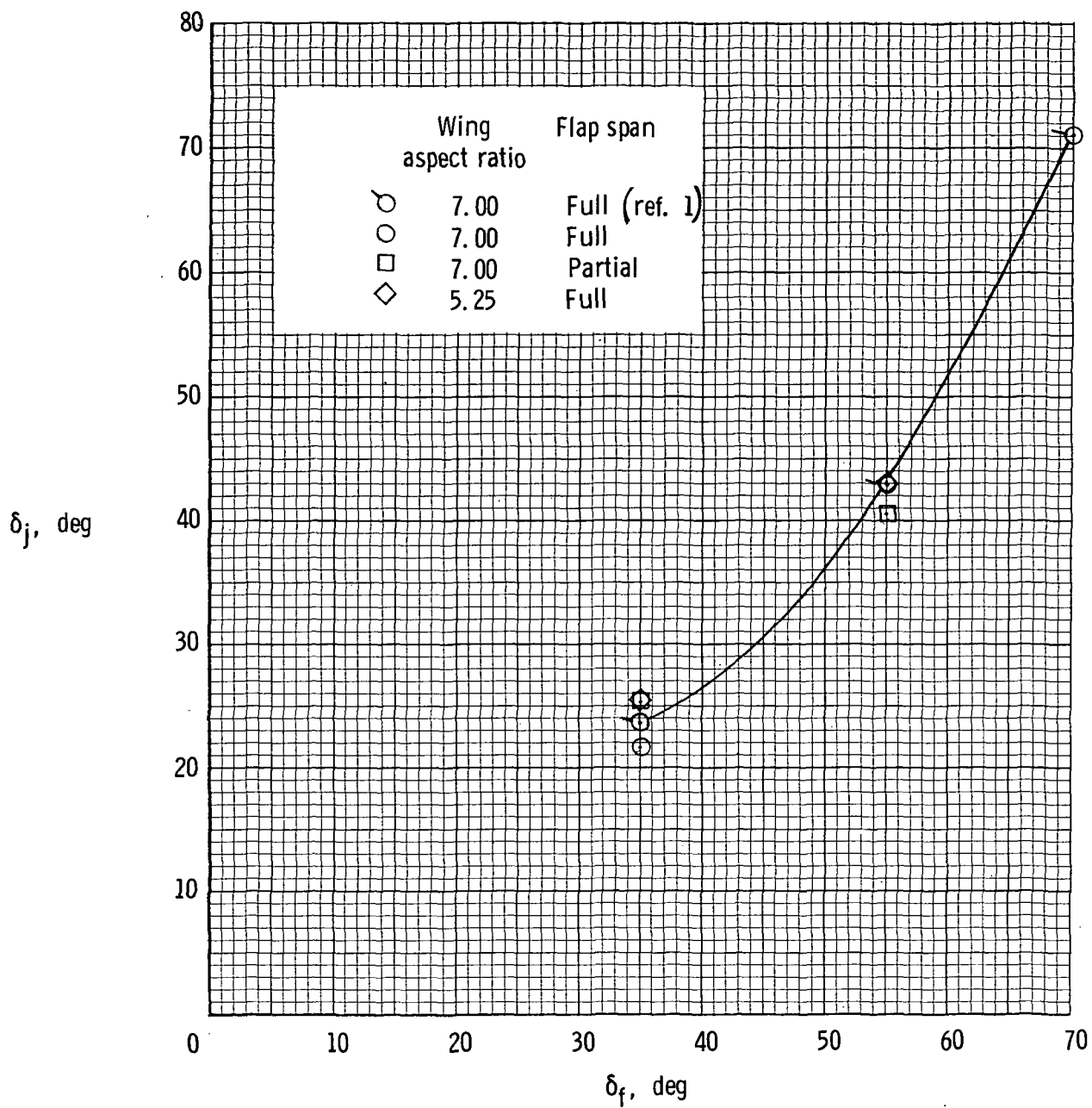
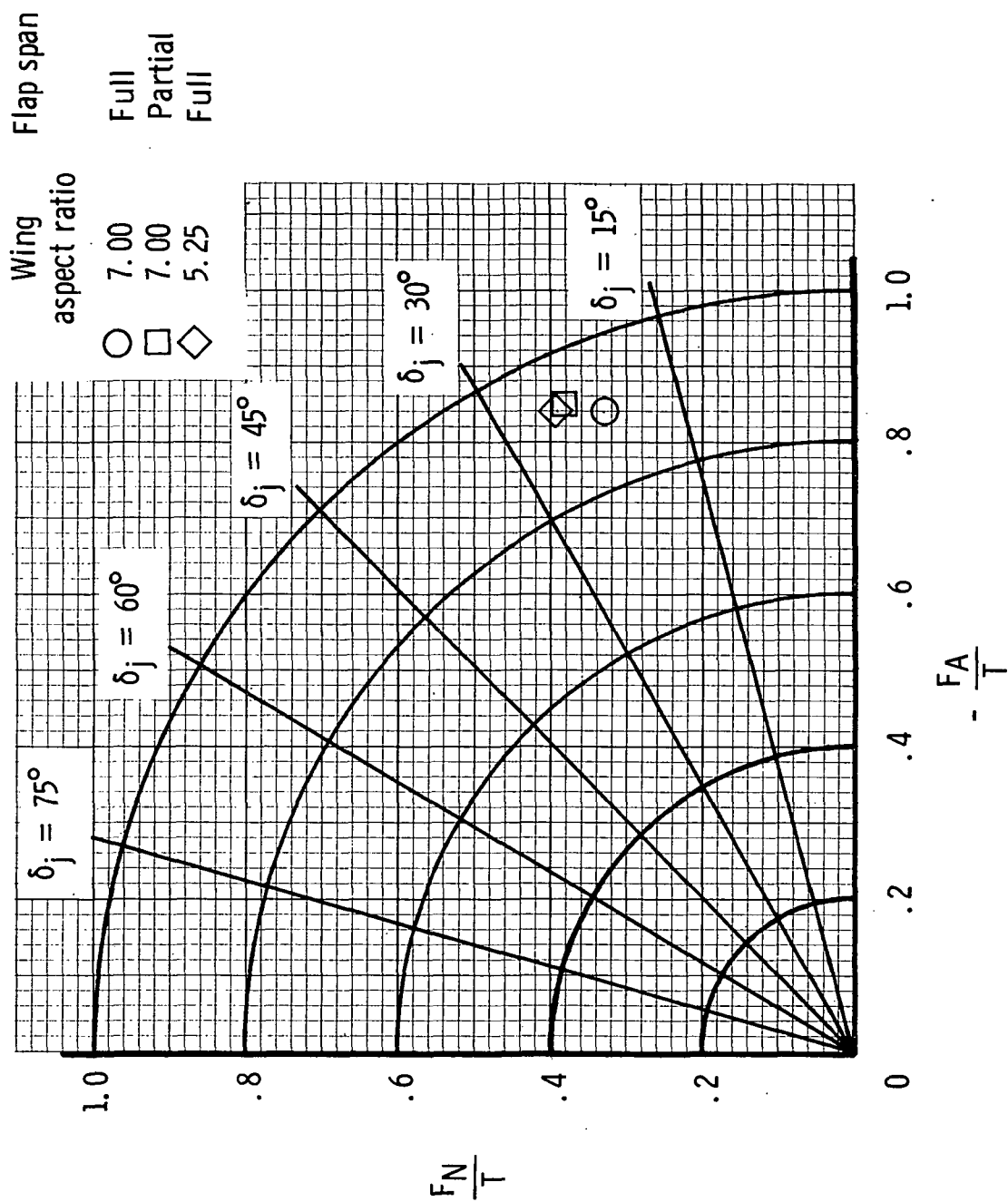
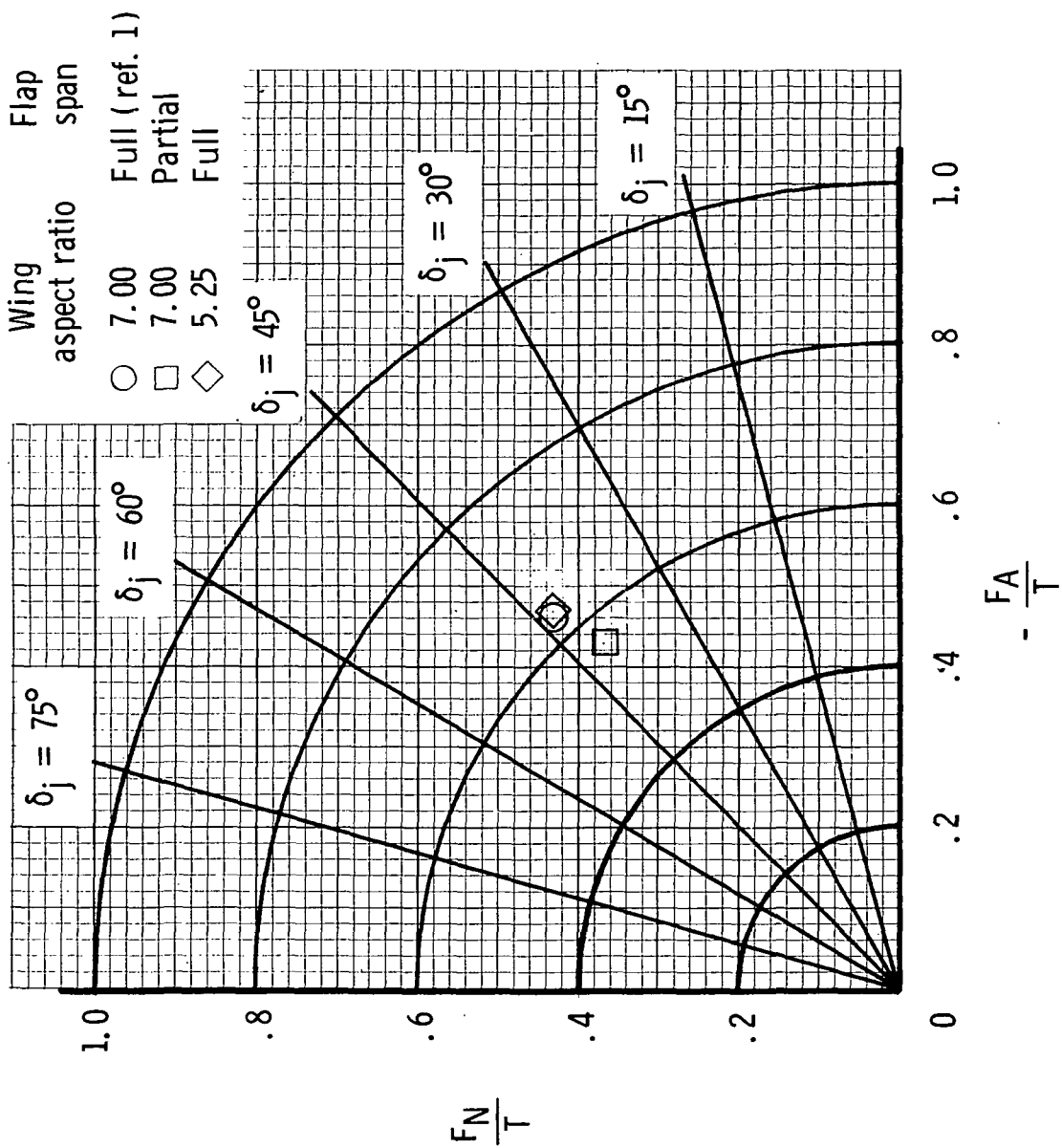


Figure 8.- Calibration of jet turning angles.



(a)  $\delta_f = 35^\circ$ .

Figure 9.- Summary of flap turning efficiency and turning angle.



(b)  $\delta_f = 55^\circ$ .

Figure 9.- Concluded.



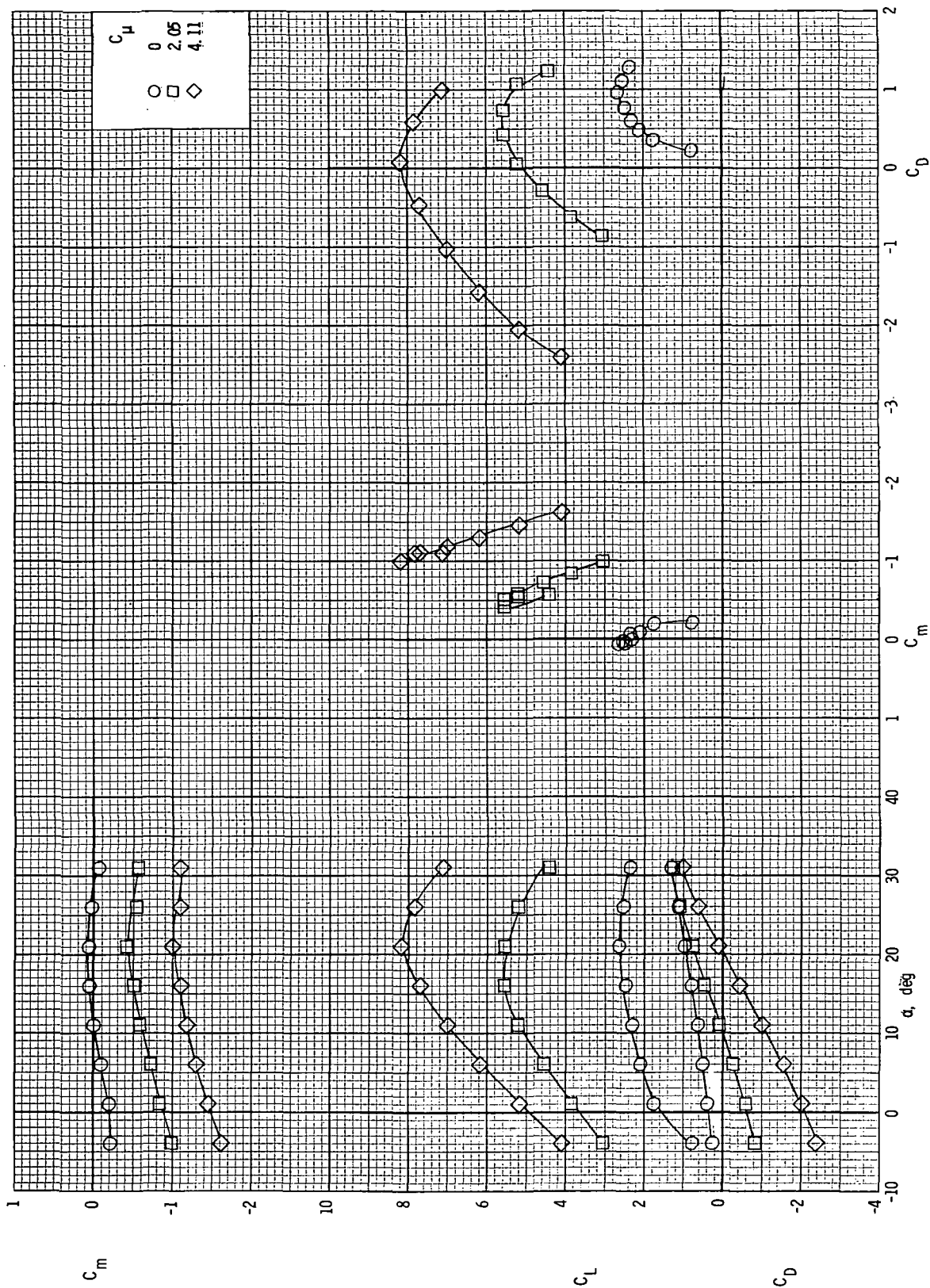


Figure 10.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a full-span flap.  $\delta_f = 35^\circ$ .

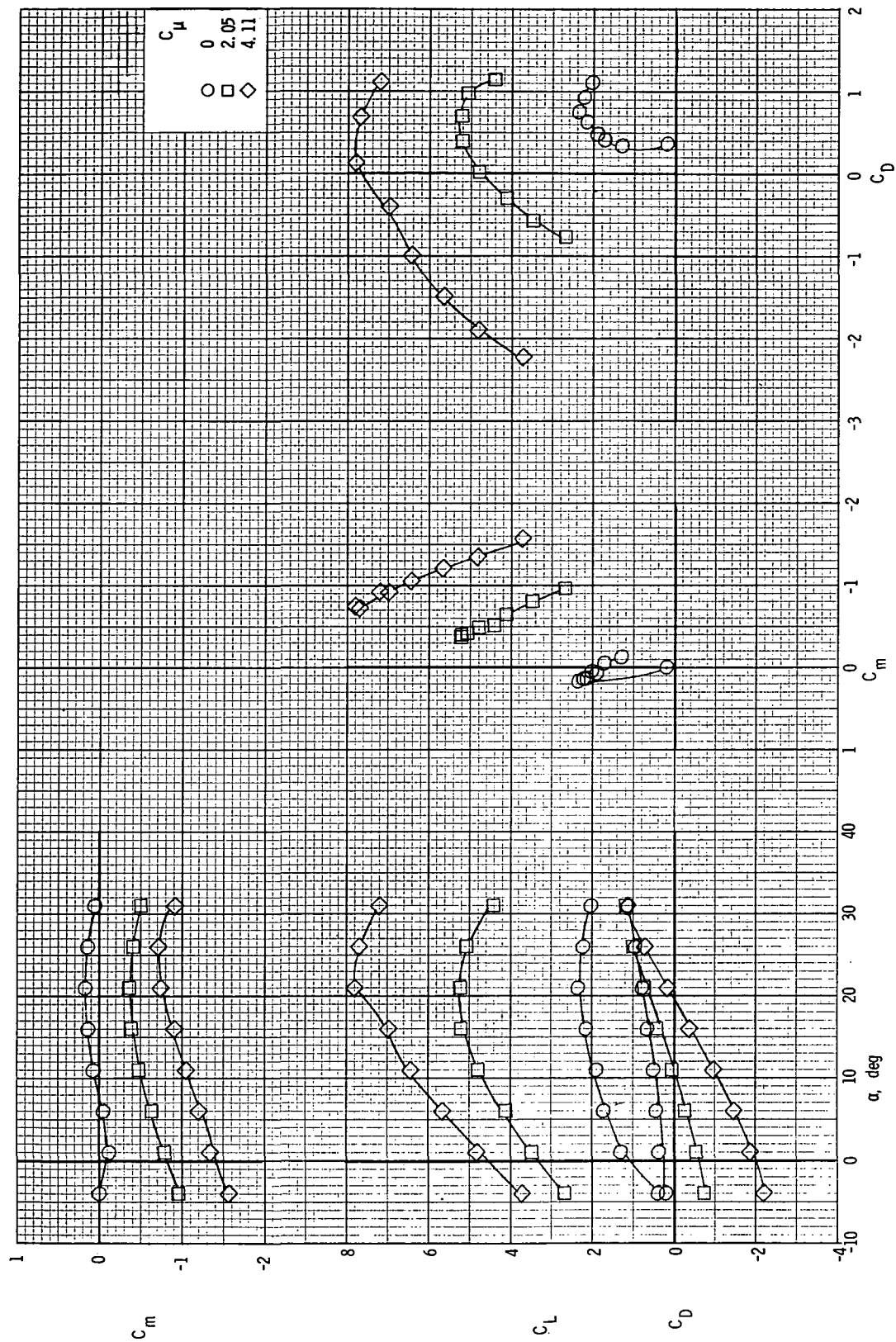


Figure 11.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a partial-span flap.  $\delta_f = 35^\circ$ .

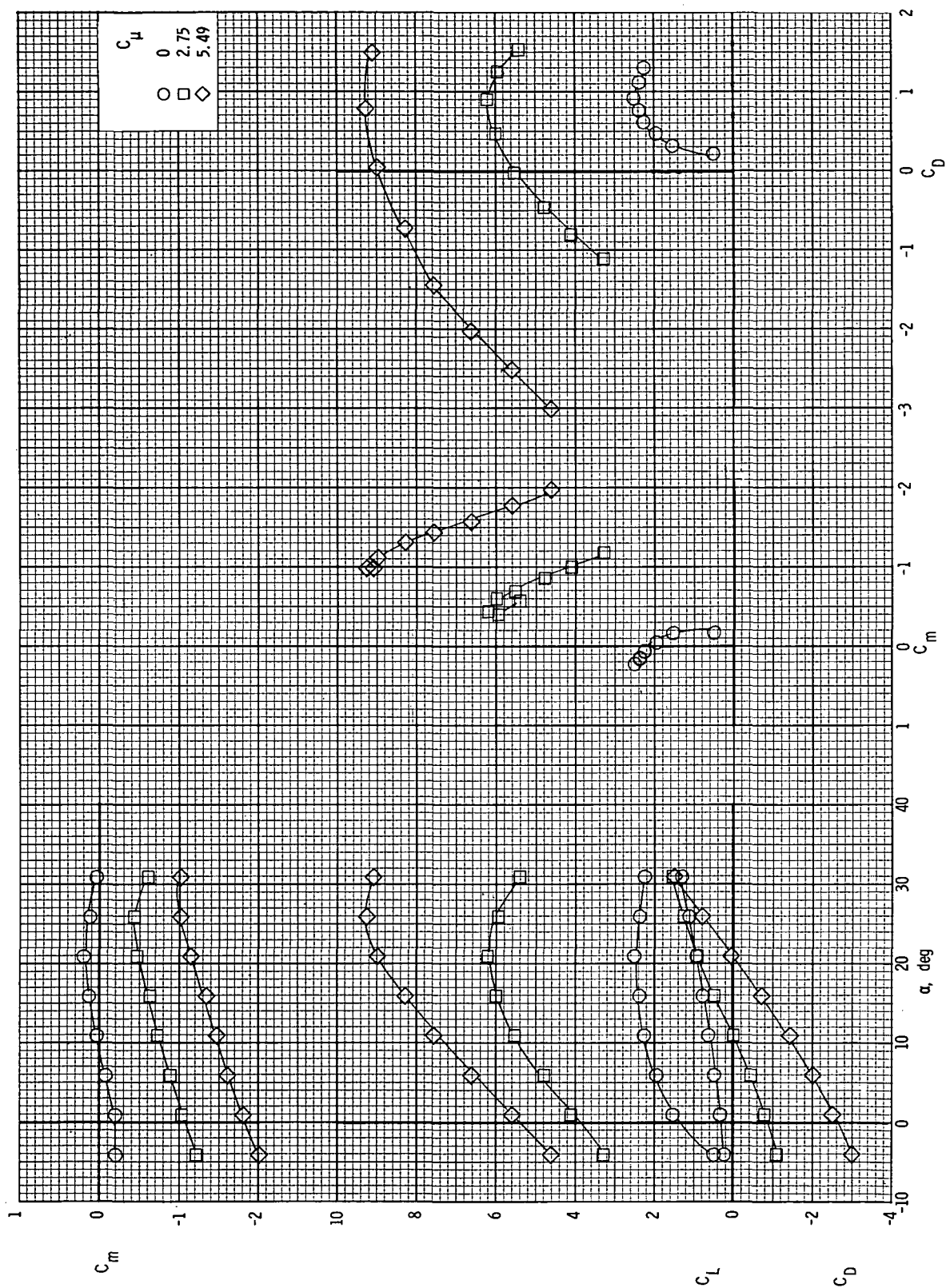


Figure 12.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 5.25 and a full-span flap. All engines operating.  $\delta_f = 35^\circ$ .

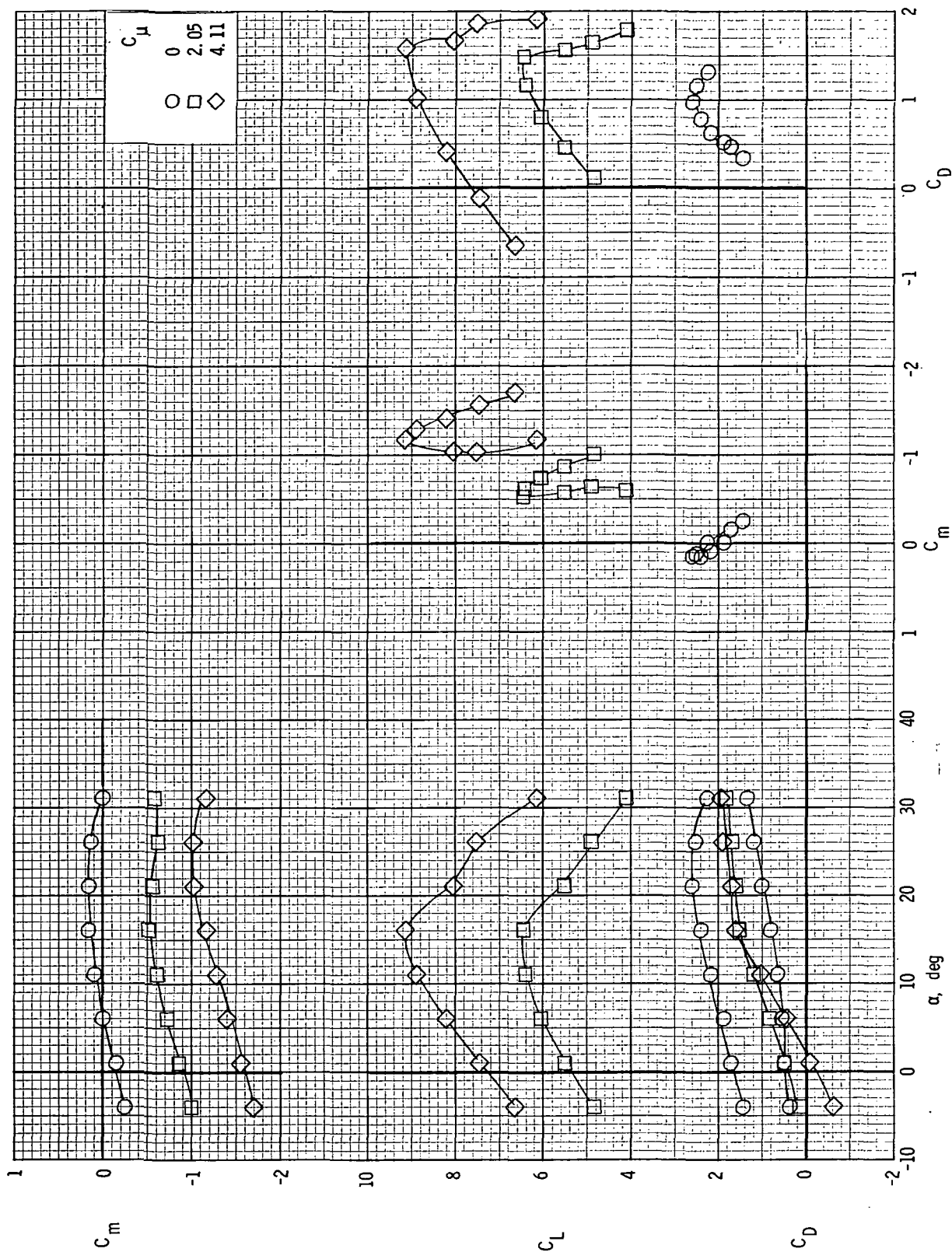


Figure 13.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a full-span flap.  $\delta_f = 55^\circ$ .

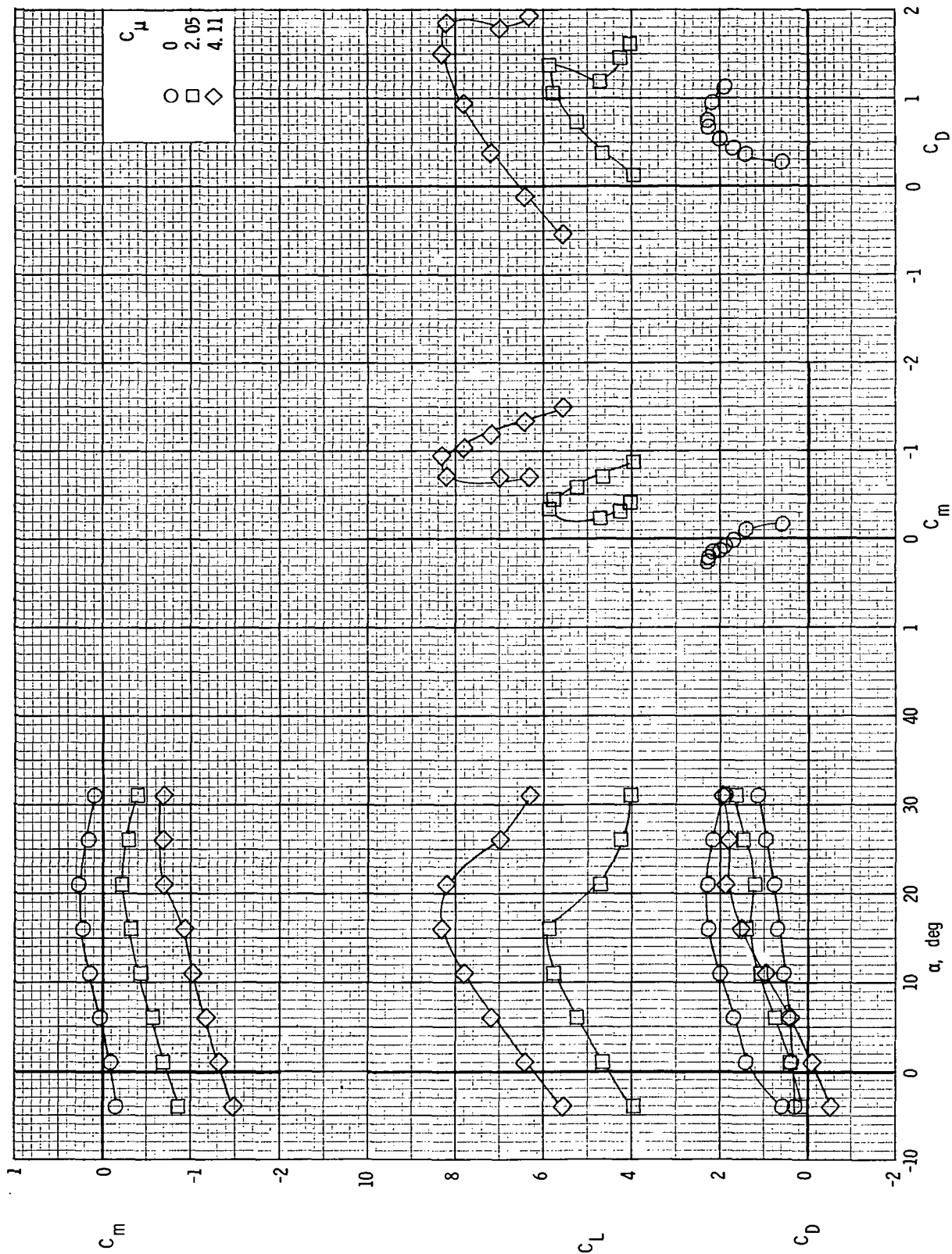


Figure 14.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a partial-span flap:  $\delta_f = 55^\circ$ .

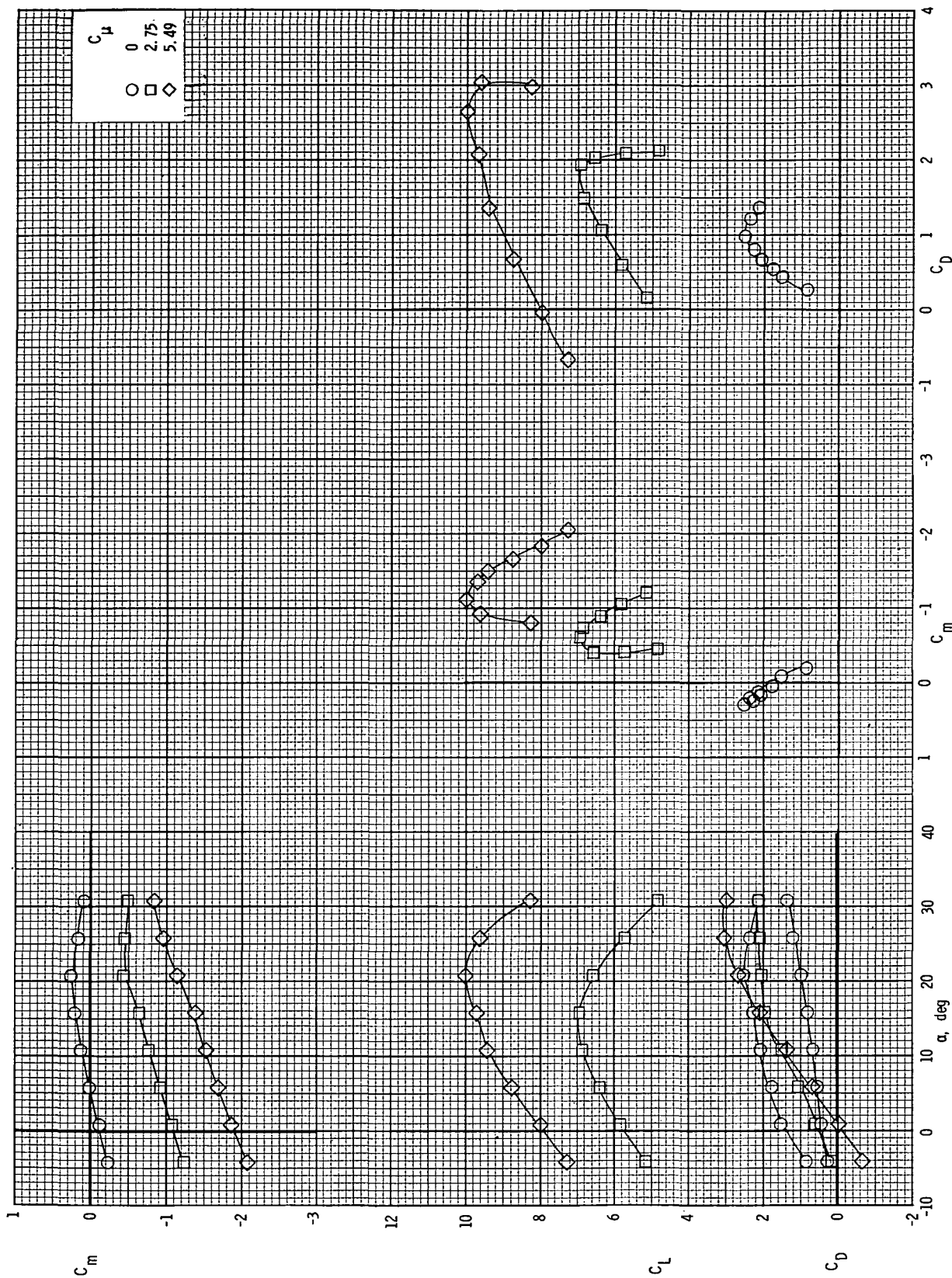
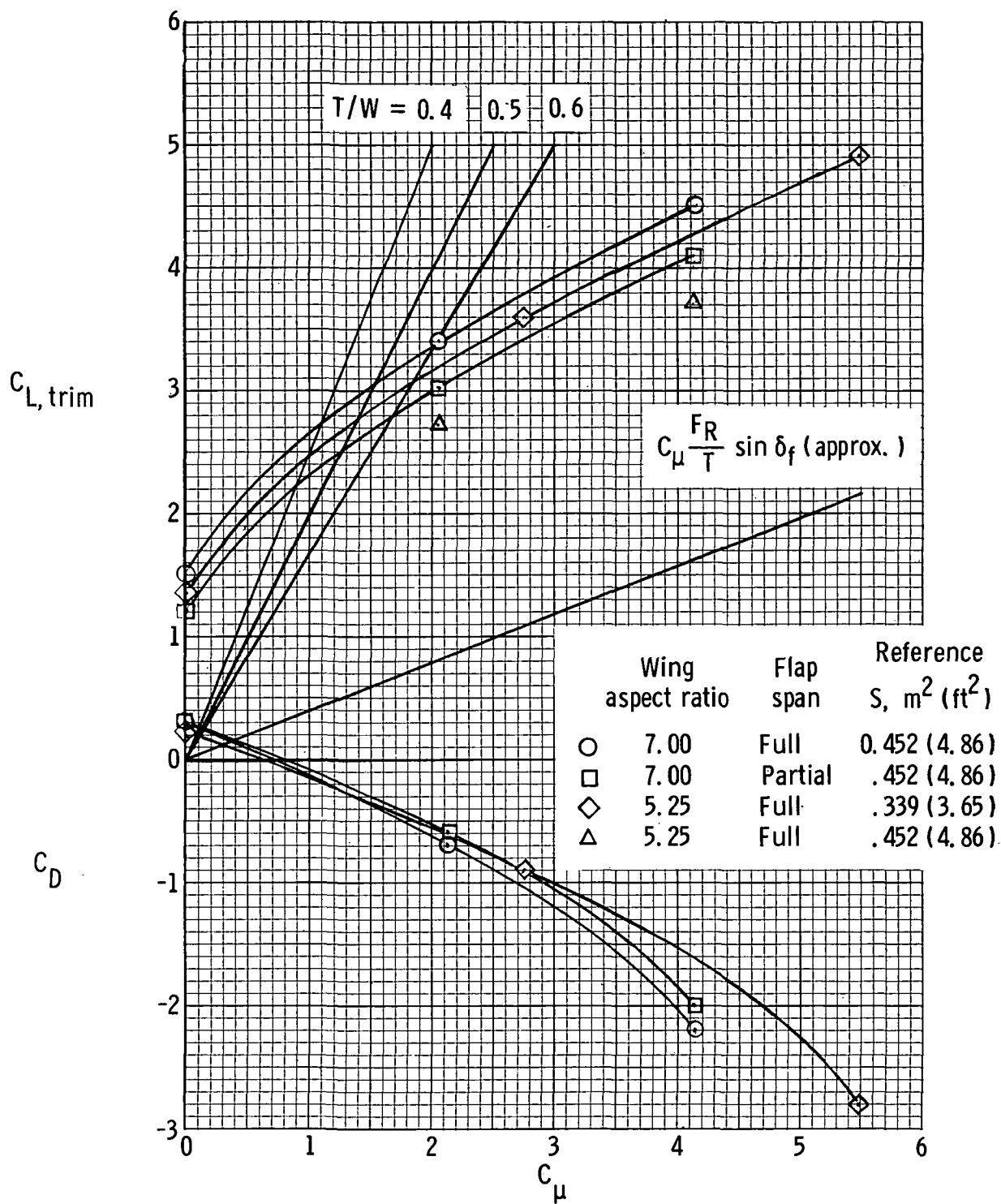


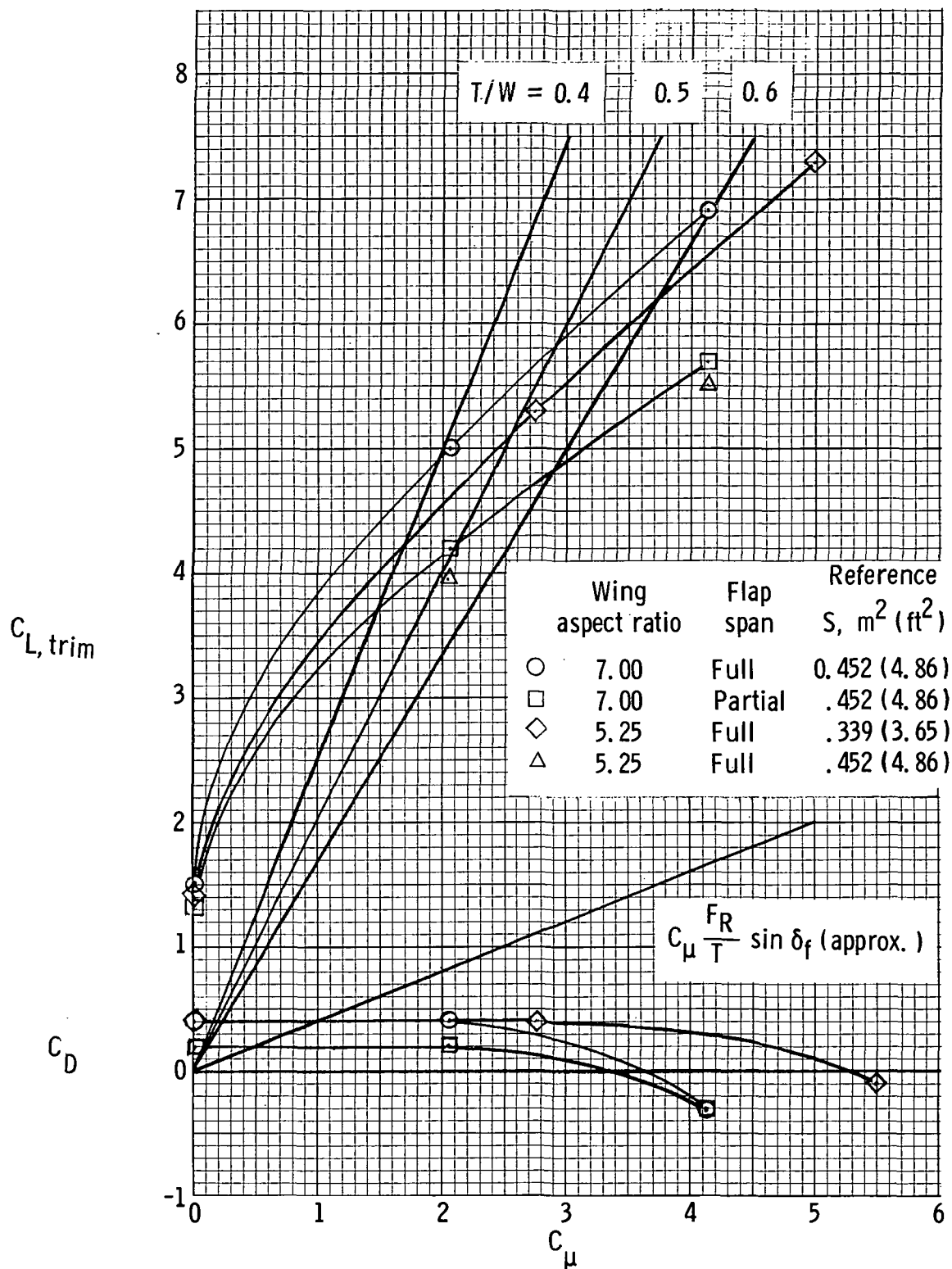
Figure 15.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 5.25 and a full-span flap. All engines operating.  $\delta_f = 55^\circ$ .



(a)  $\delta_f = 35^\circ$ .

Figure 16.- Longitudinal aerodynamic characteristics of the model versus thrust coefficient.  $\alpha = 1^\circ$ .





(b)  $\delta_f = 55^\circ$ .

Figure 16.- Concluded.



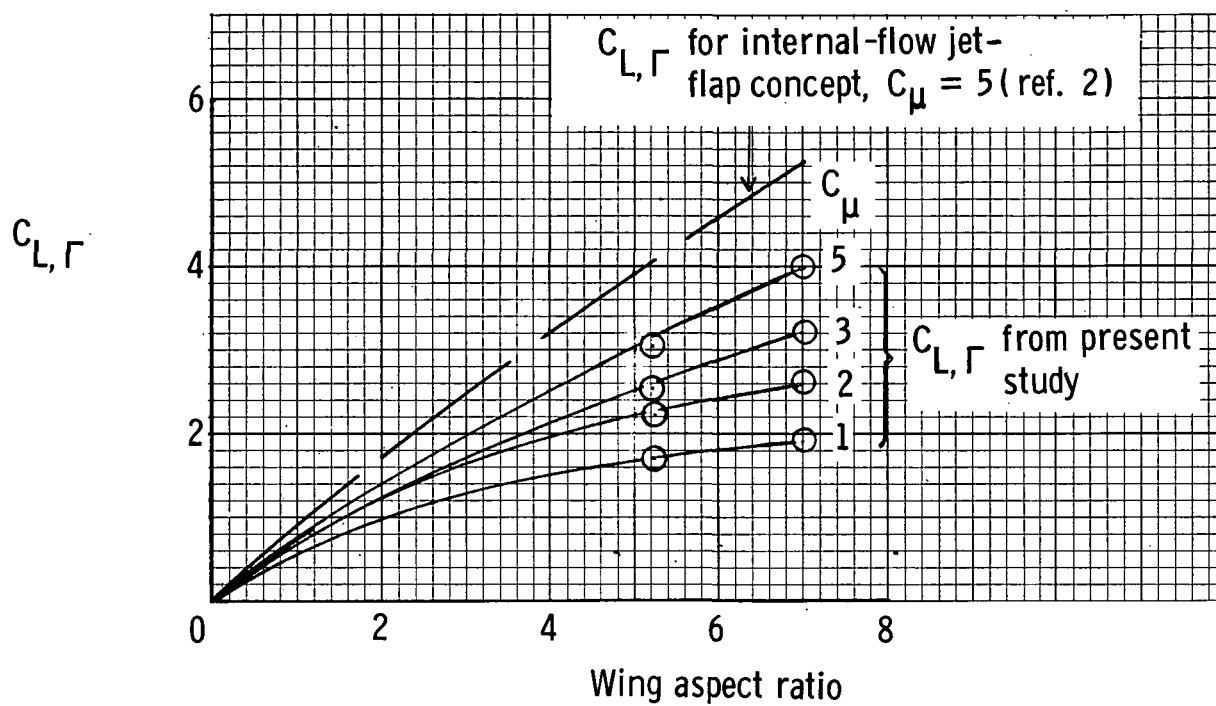


Figure 17.- Variation of added circulation lift with wing aspect ratio for several thrust coefficients.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ .

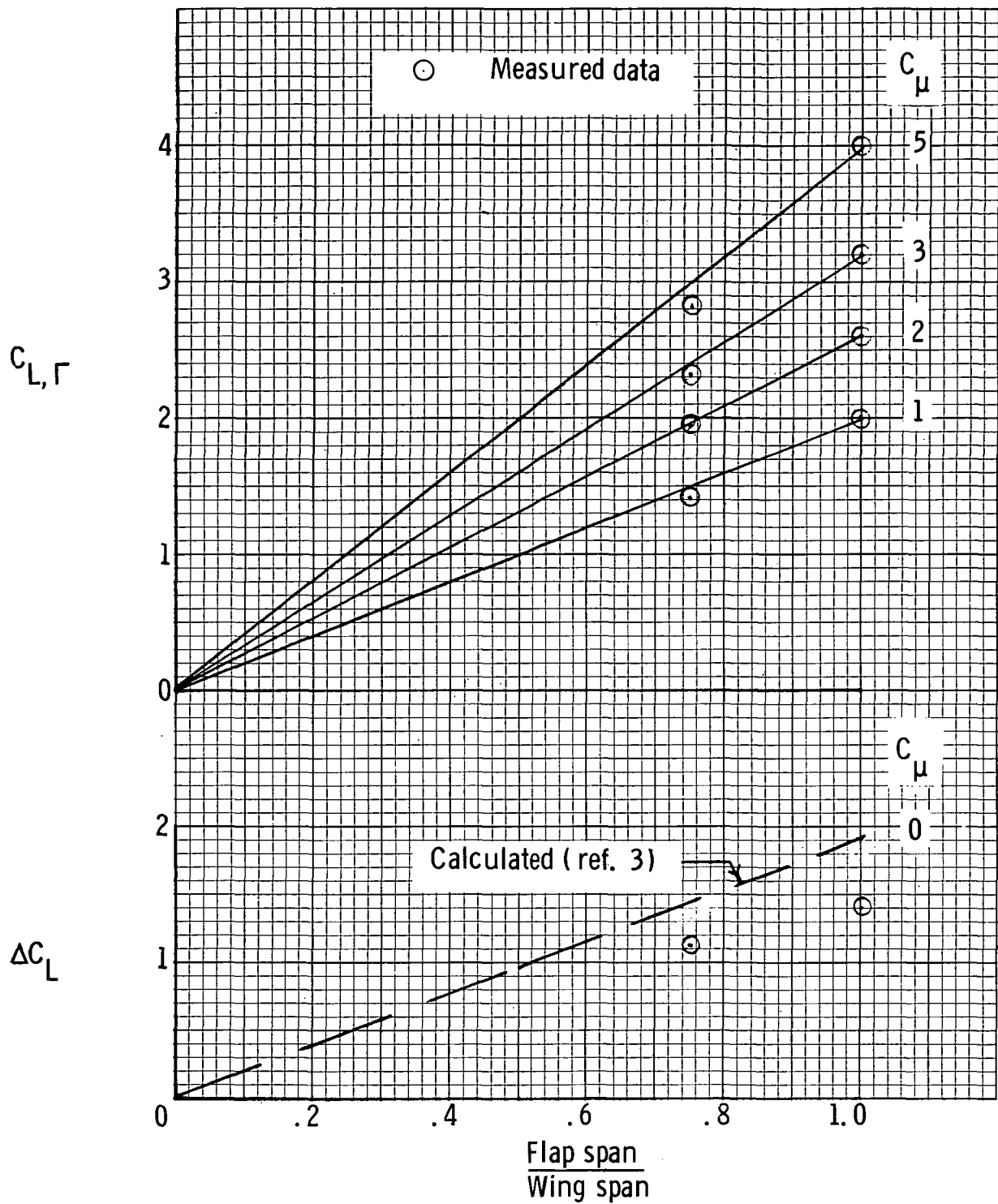
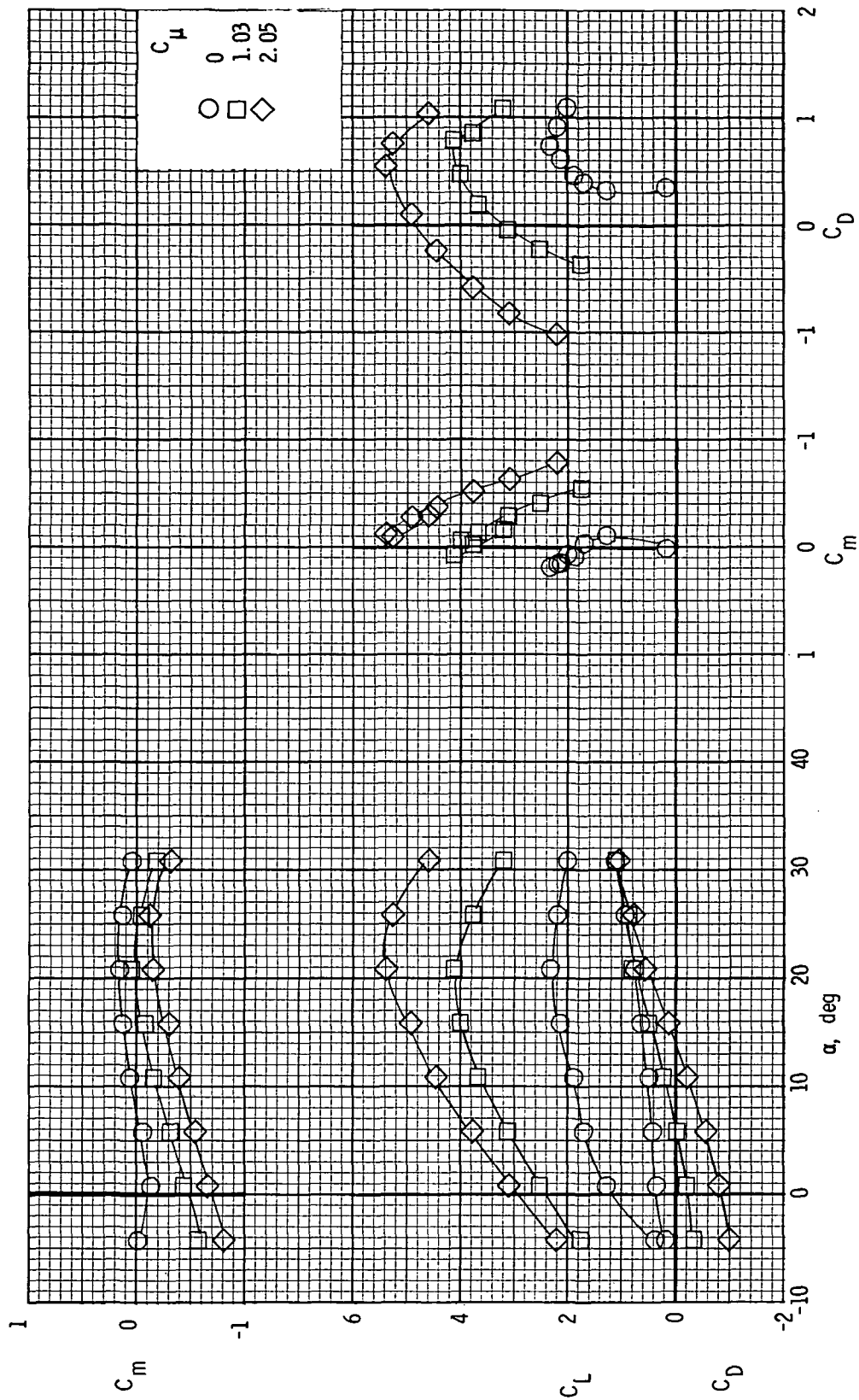


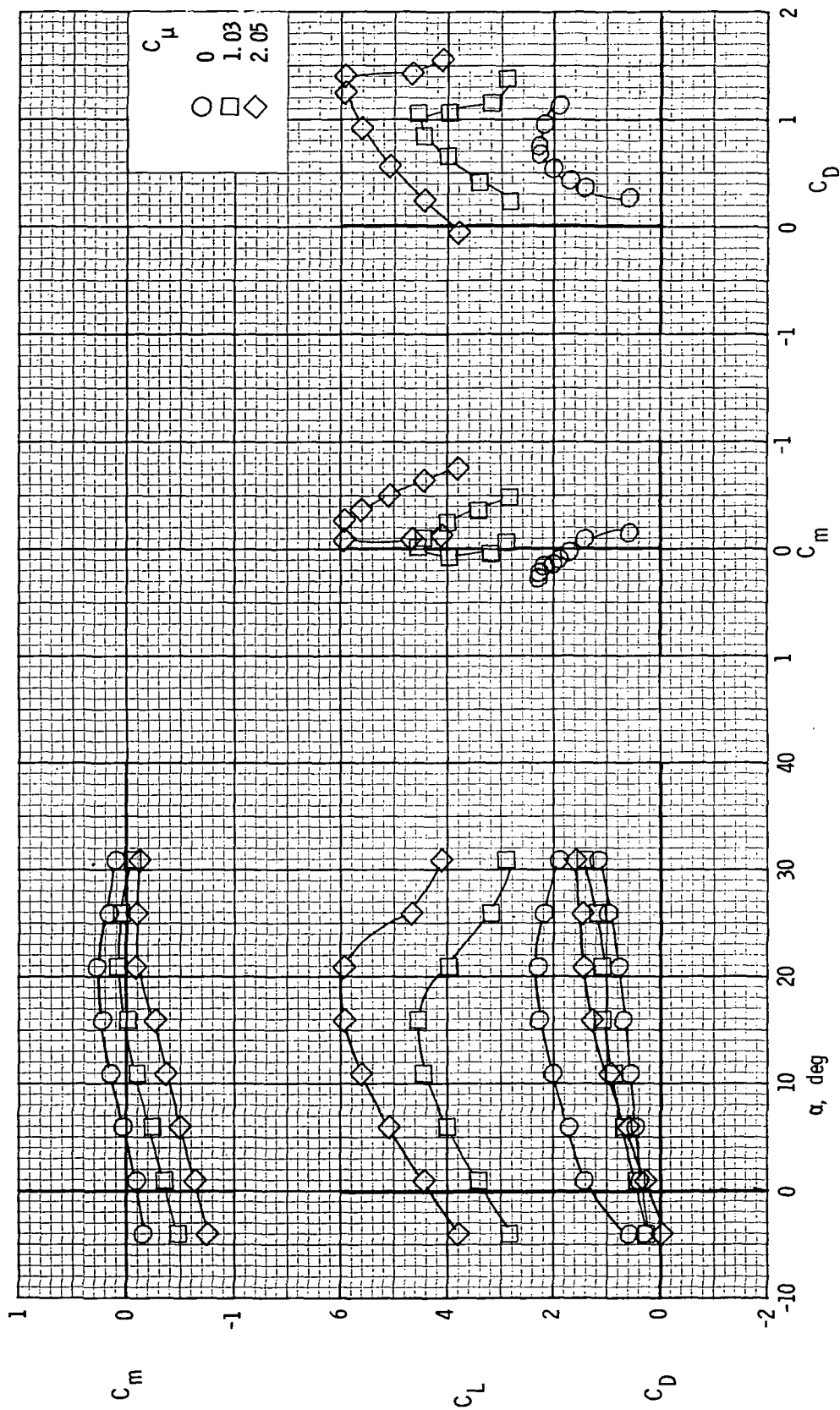
Figure 18.- Effect of span of trailing-edge flap on added circulation lift.

$$A = 7; \quad \delta_f = 55^\circ; \quad \alpha = 1^\circ.$$



(a)  $\delta_f = 35^\circ$ .

Figure 19.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a partial-span flap. Inboard engines operating.



(b)  $\delta_f = 55^\circ$ .

Figure 19. - Concluded.

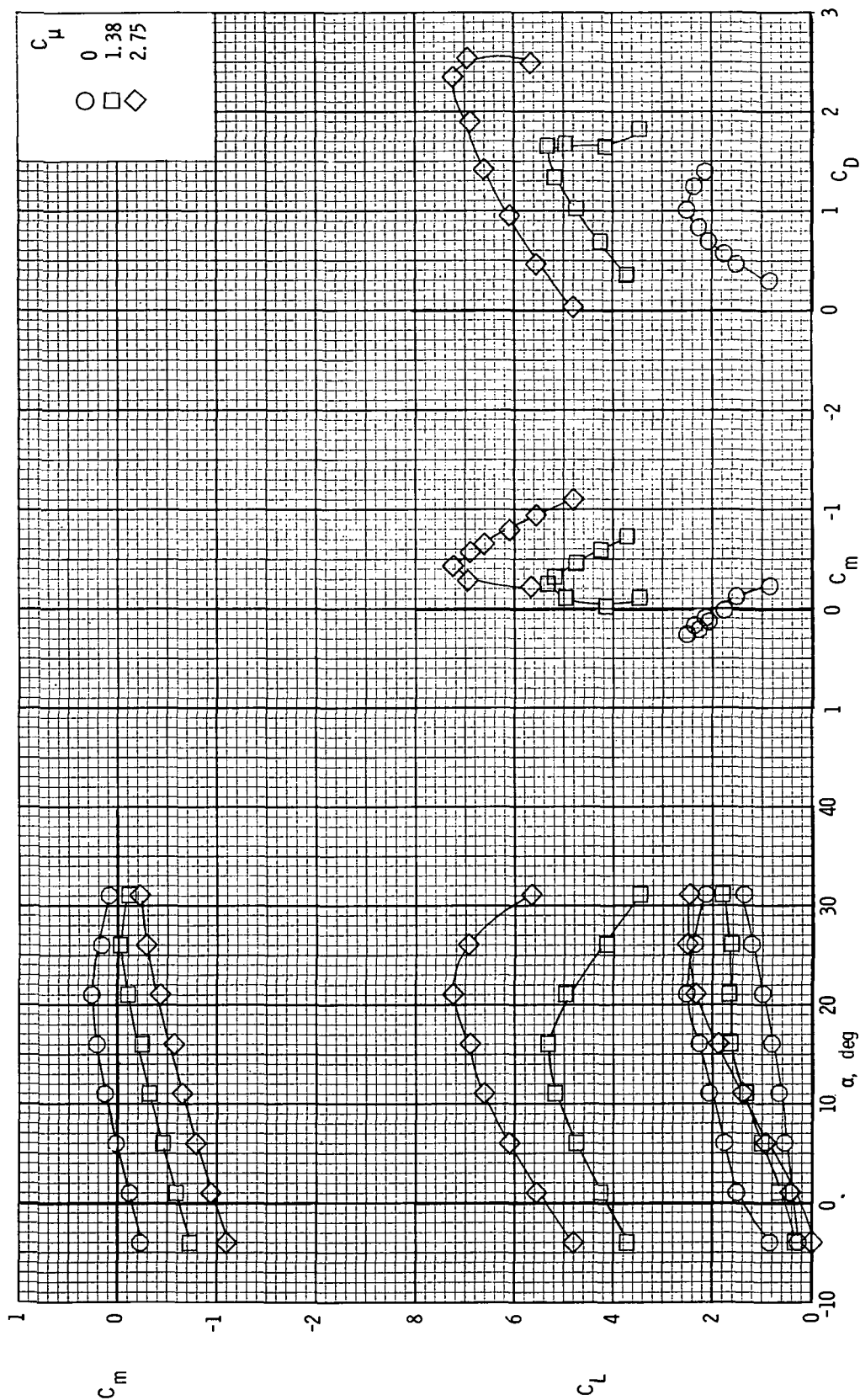


Figure 20.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 5.25 and a full-span flap. Inboard engines operating.  $\delta_f = 55^\circ$ .

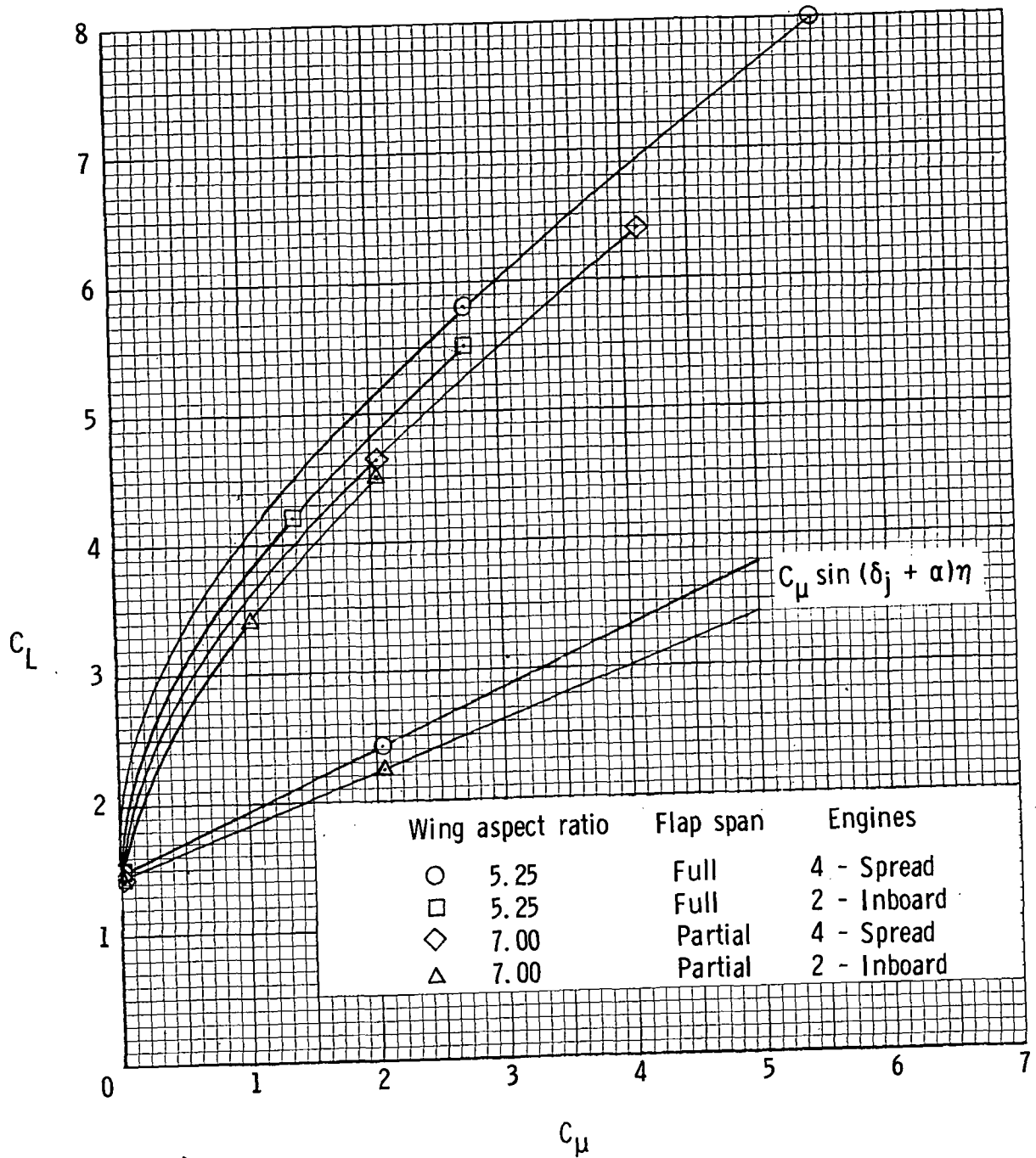


Figure 21.- Effect of spanwise engine location on lift coefficient.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ .

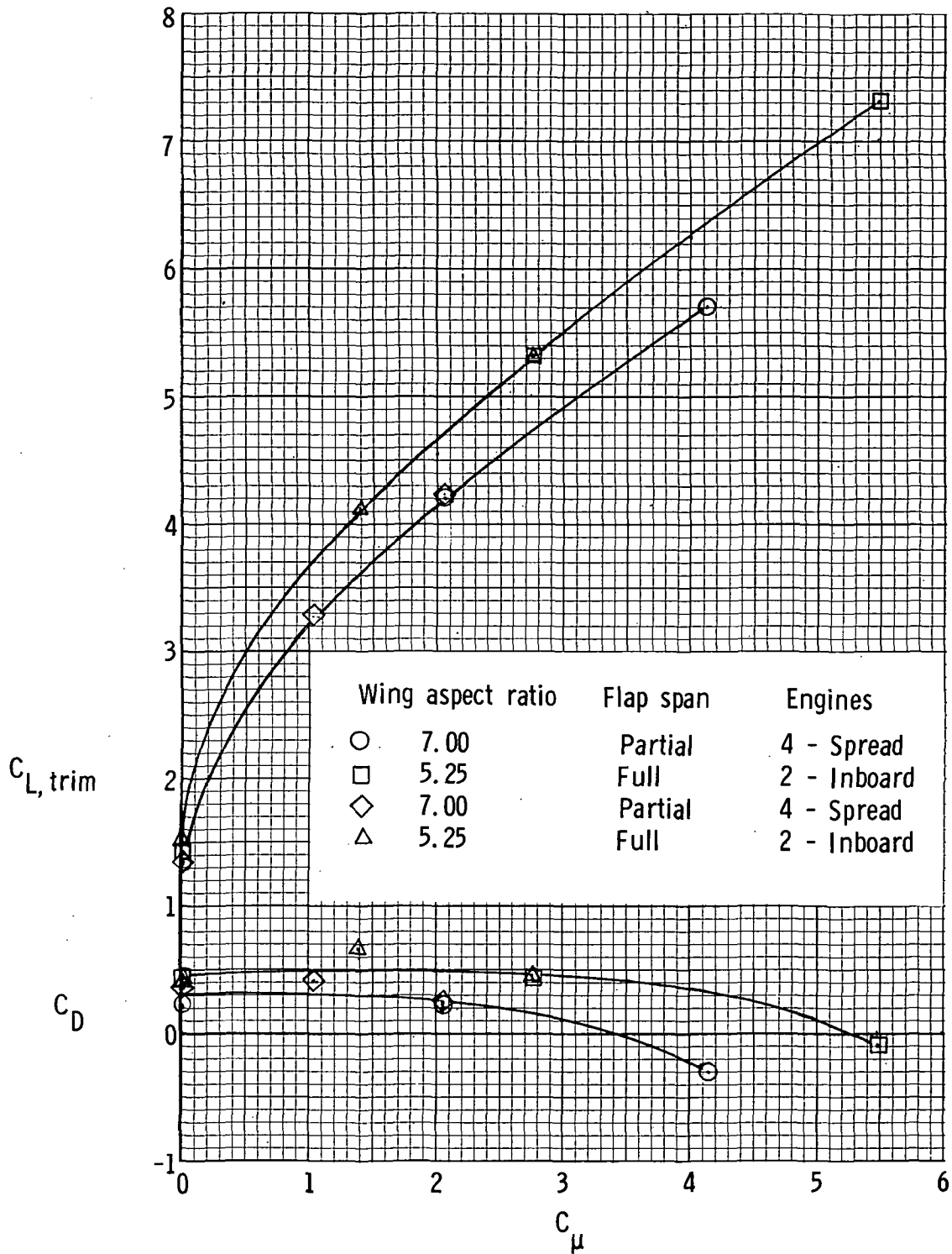
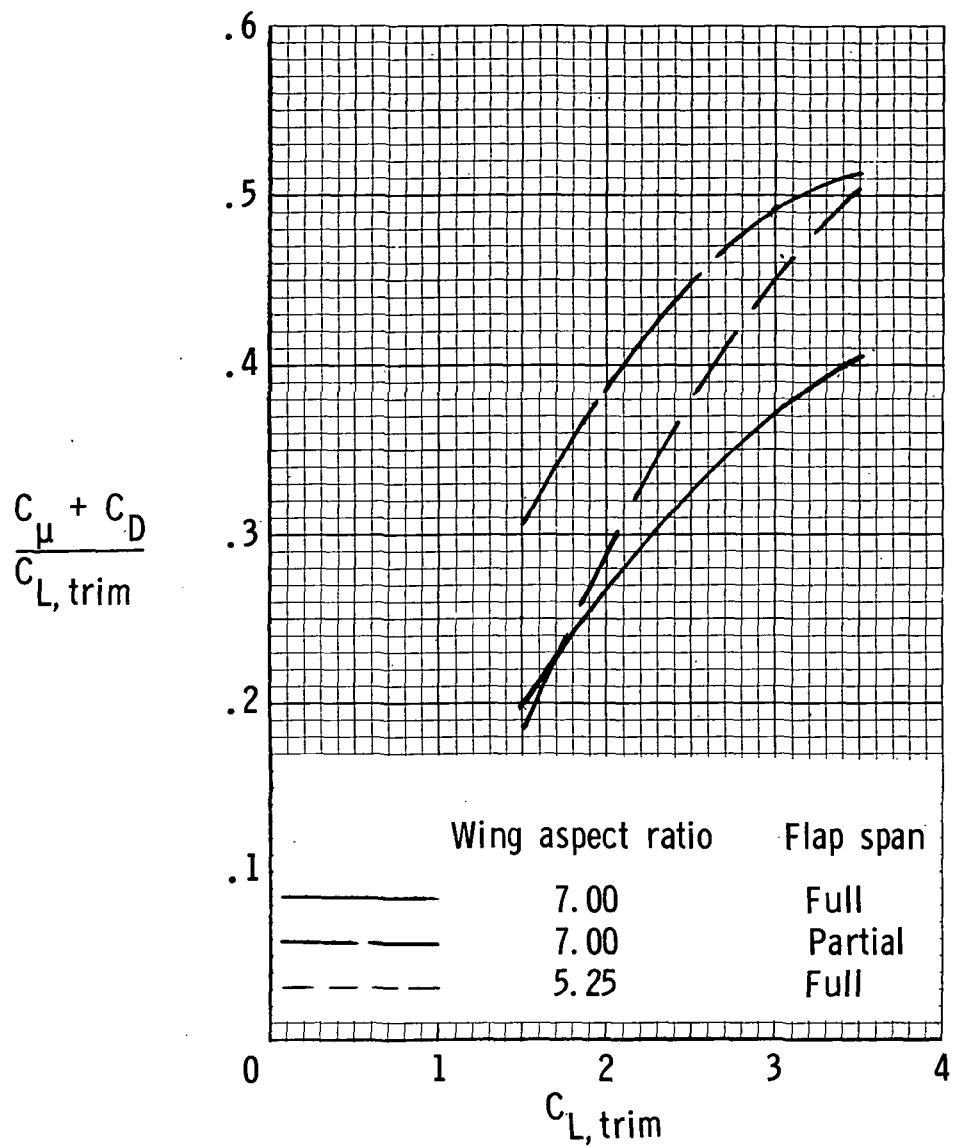


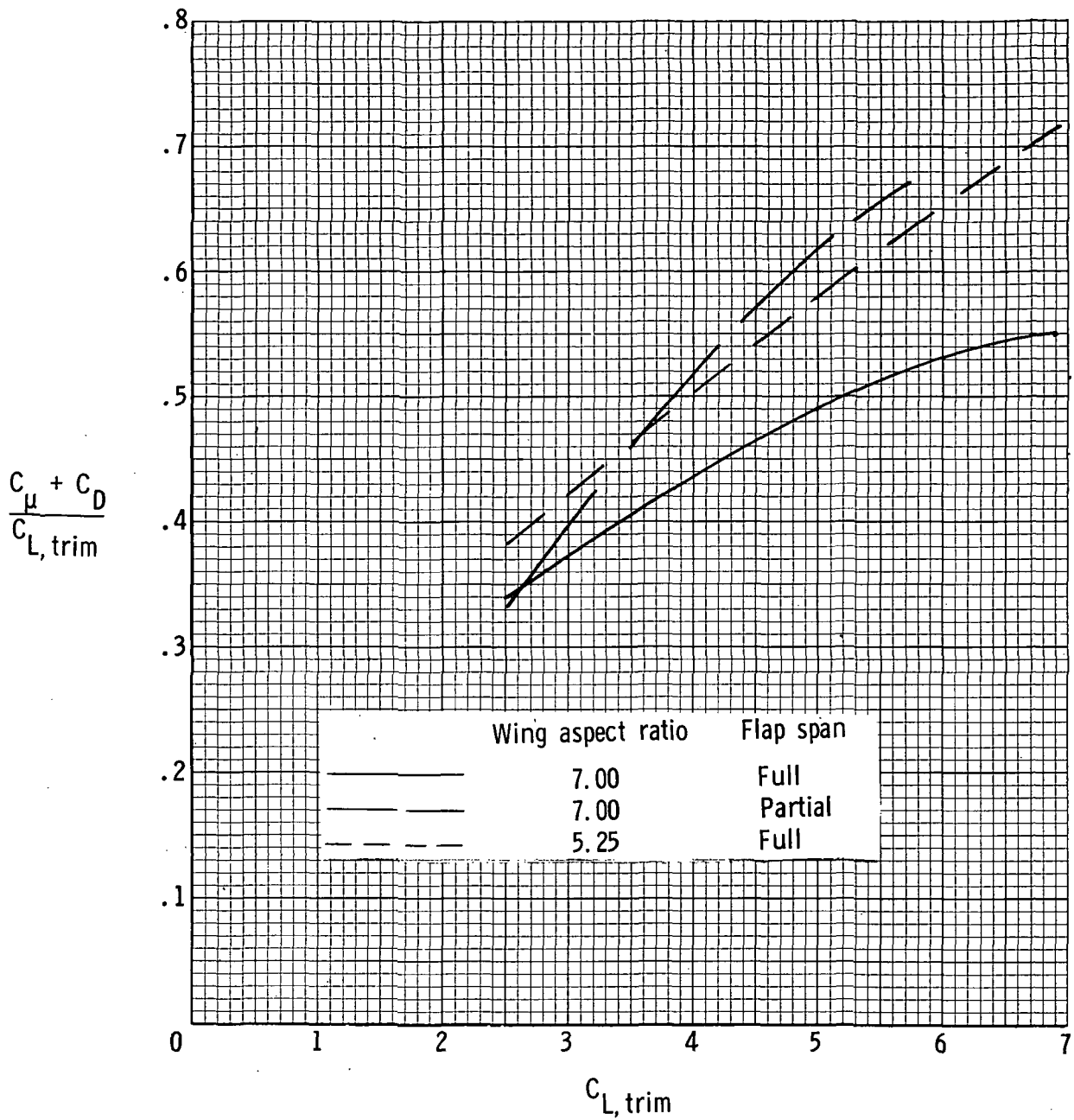
Figure 22.- Comparison of the longitudinal characteristics of the model for the spread and inboard engine configurations.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ .



(a)  $\delta_f = 35^\circ$ .

Figure 23.- Summary of effect of spanwise variables on longitudinal aerodynamic characteristics of model.  $\alpha = 1^\circ$ .





(b)  $\delta_f = 55^\circ$ .

Figure 23.- Concluded.

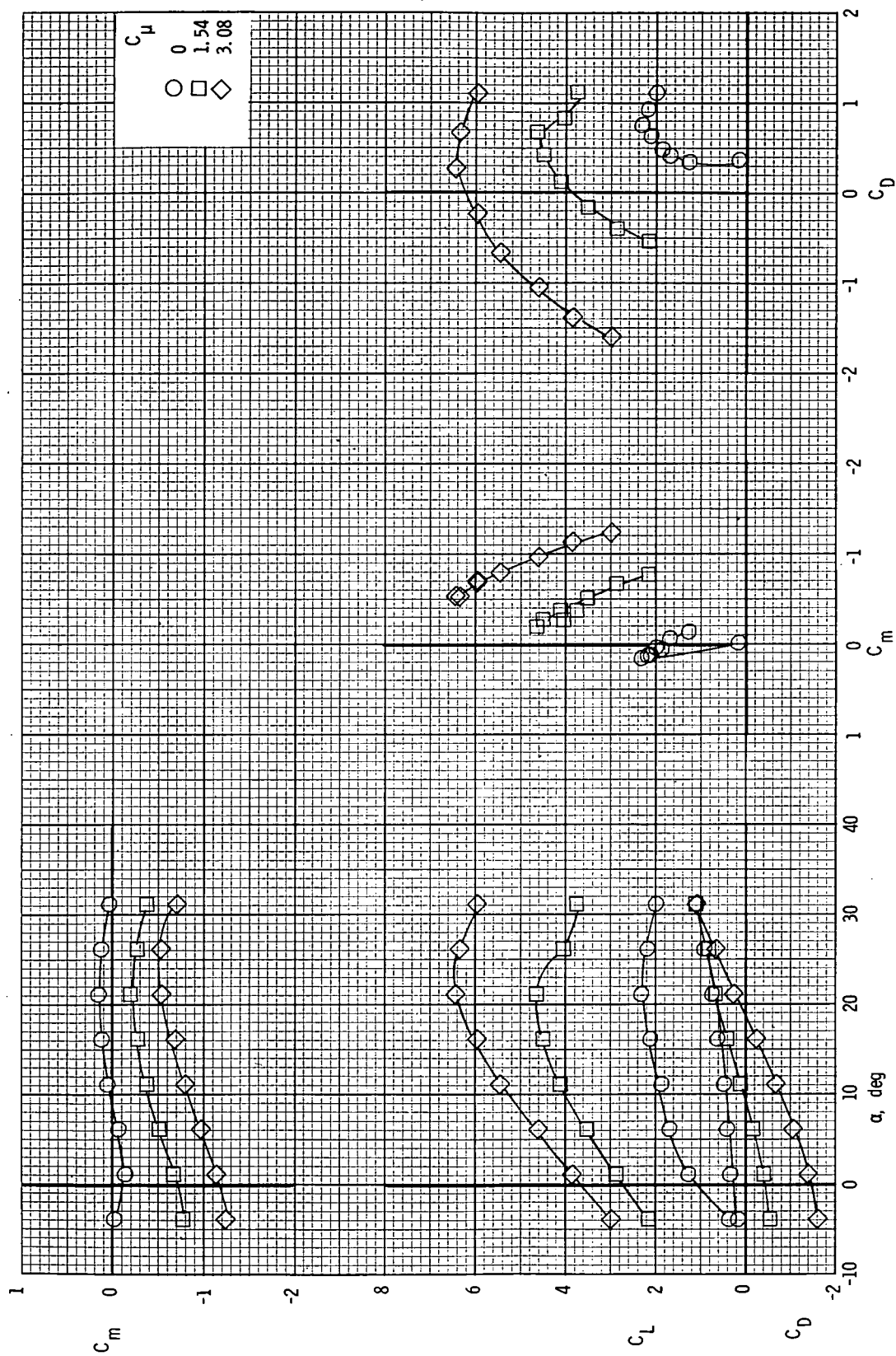


Figure 24.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a partial-span flap. Outboard engine inoperative.  $\delta_f = 35^\circ$ .

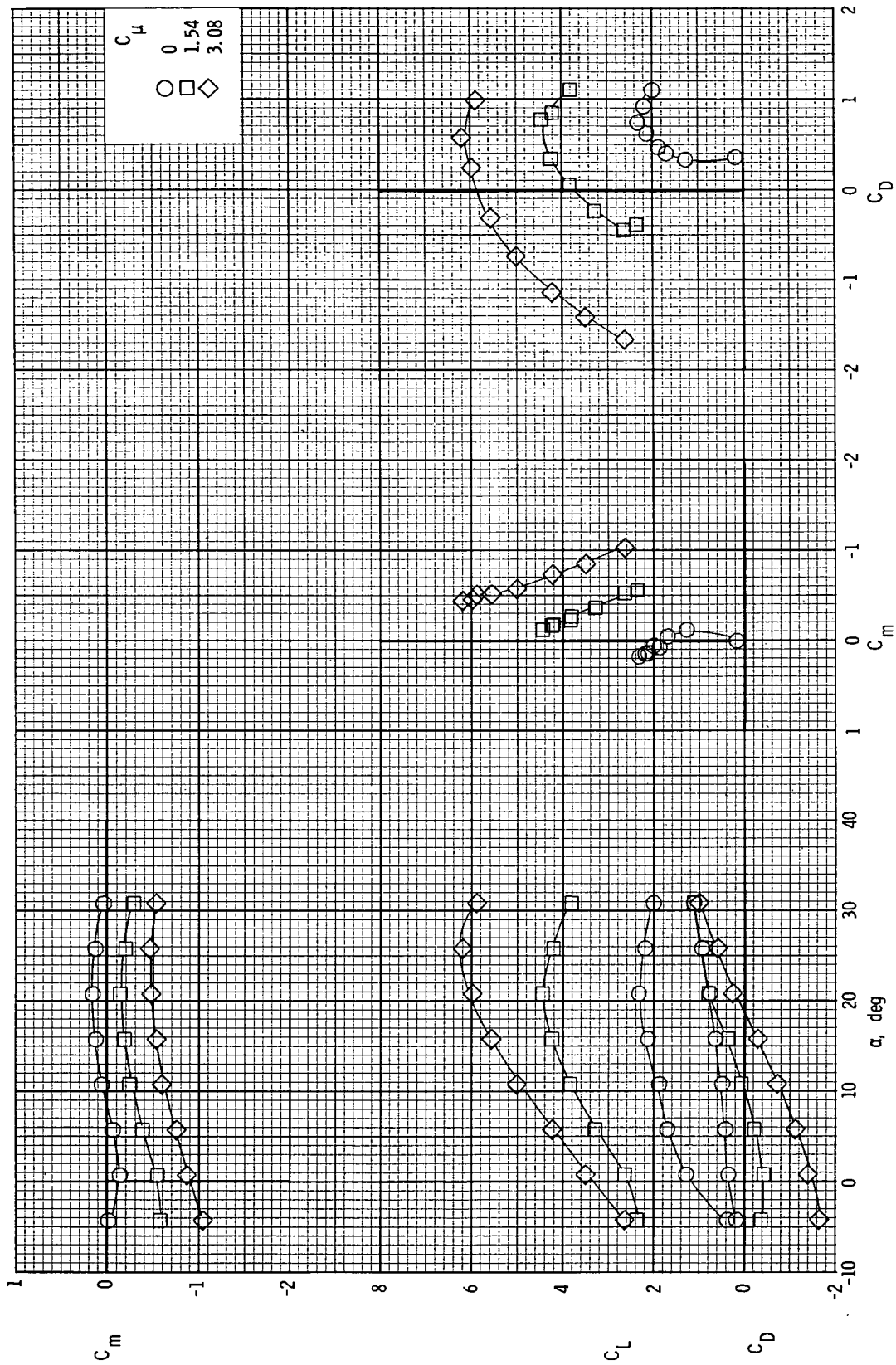


Figure 25. - Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a partial-span flap. Inboard engine inoperative.  $\delta_f = 35^\circ$ .

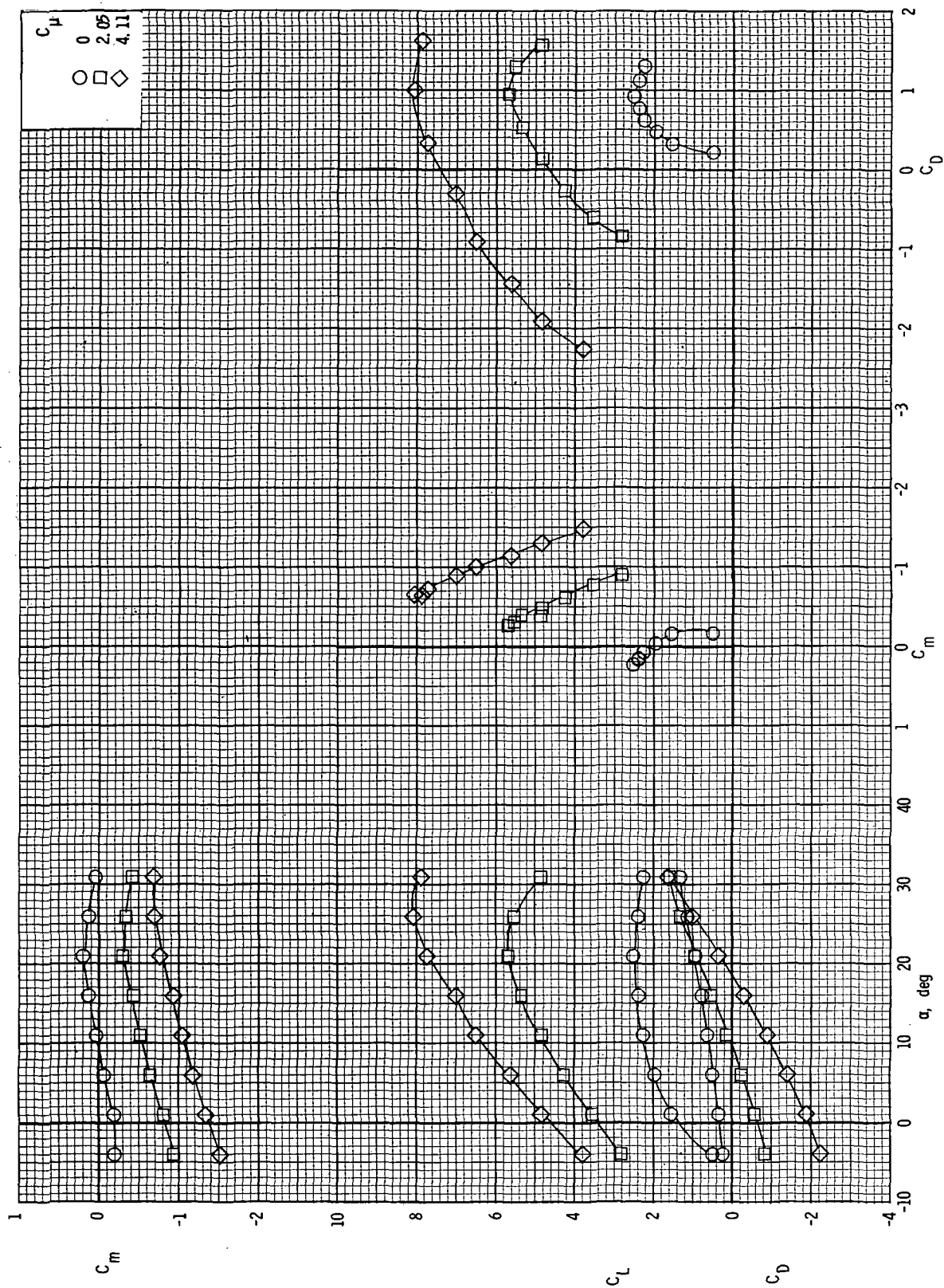


Figure 26.- Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 5.25 and a full-span flap. Outboard engine inoperative.  $\delta_f = 35^\circ$ .

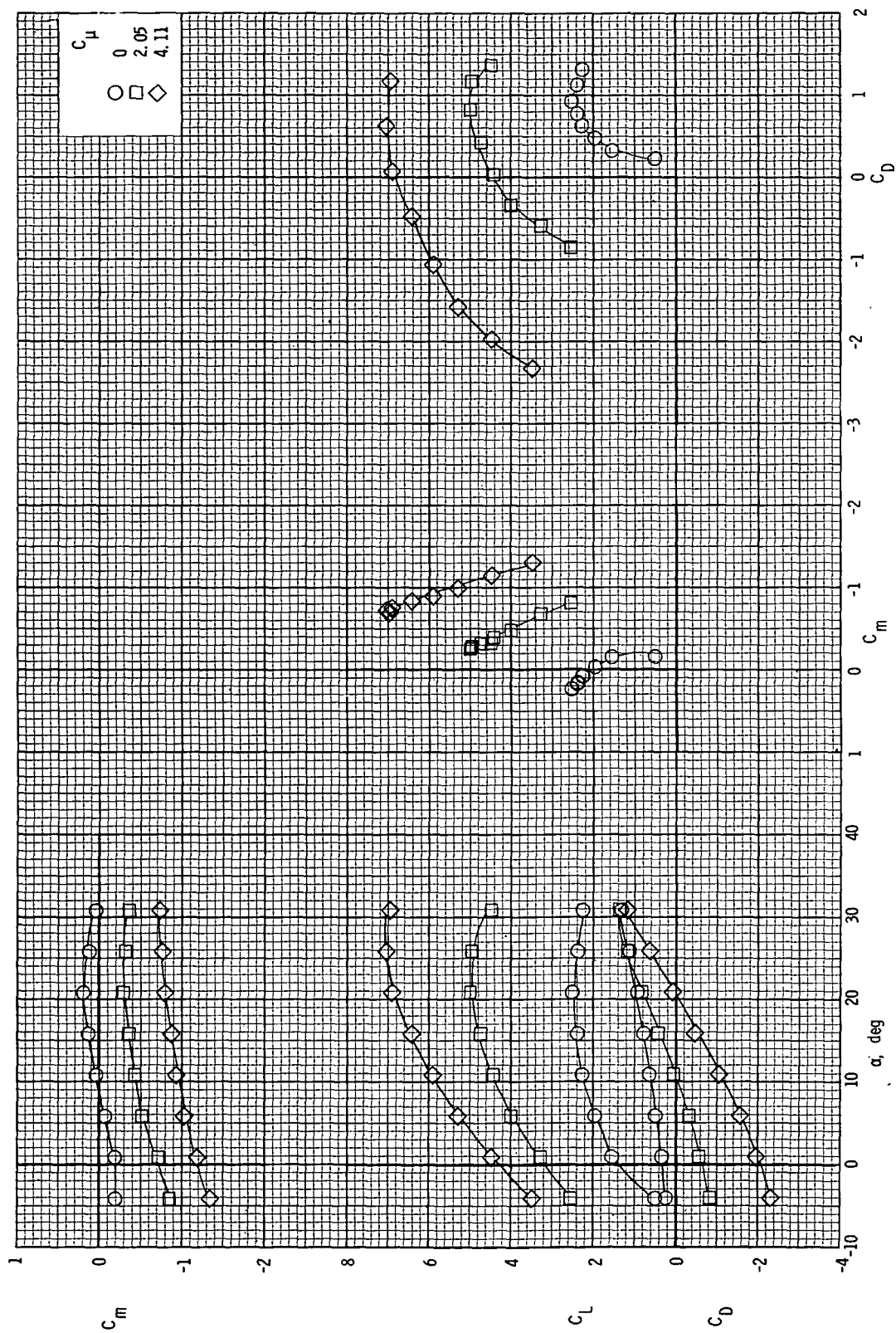


Figure 27. - Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 5.25 and a full-span flap. Inboard engine inoperative.  $\delta_f = 35^\circ$ .

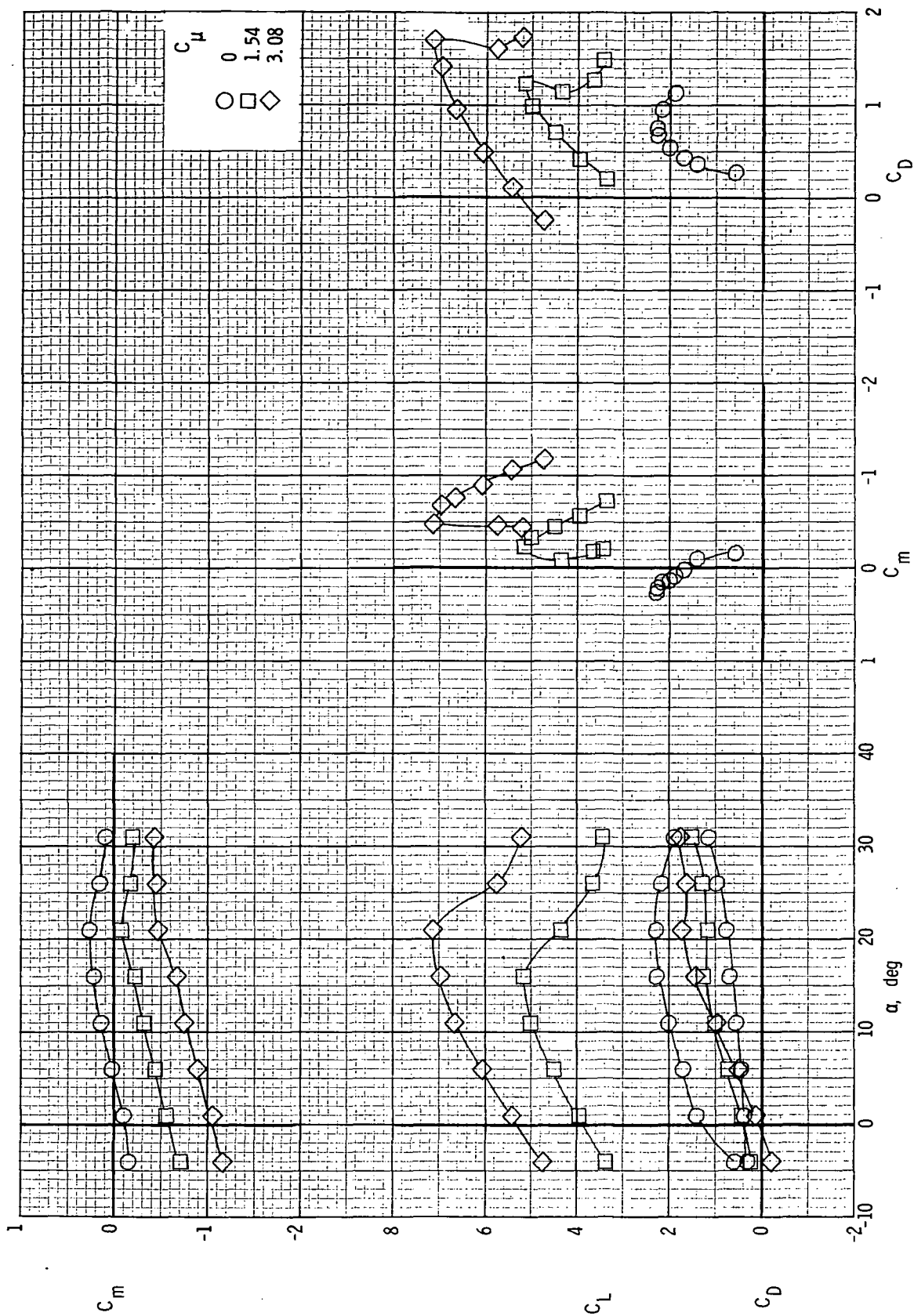


Figure 28. - Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a partial-span flap. Outboard engine inoperative.  $\delta_f = 55^\circ$ .

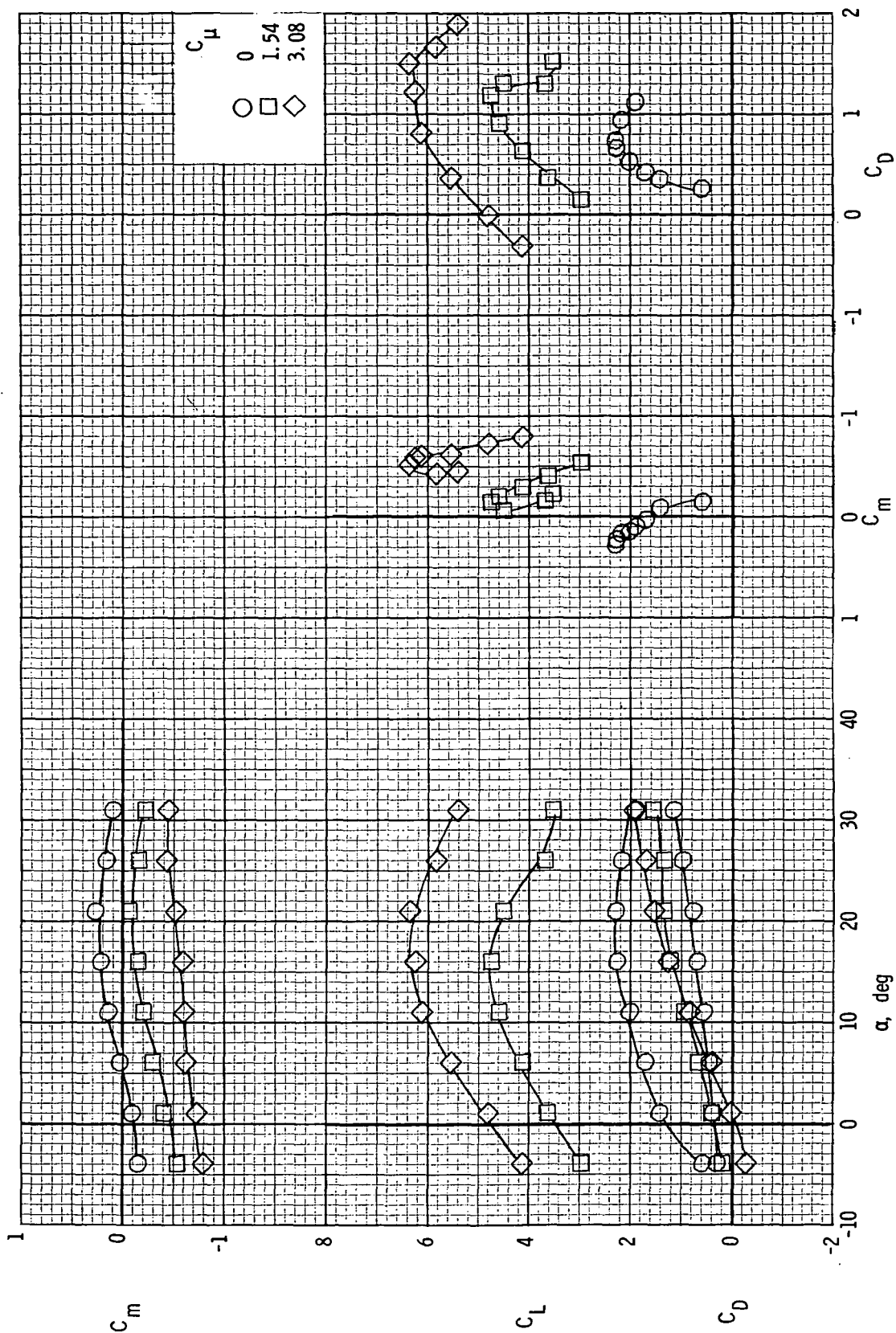
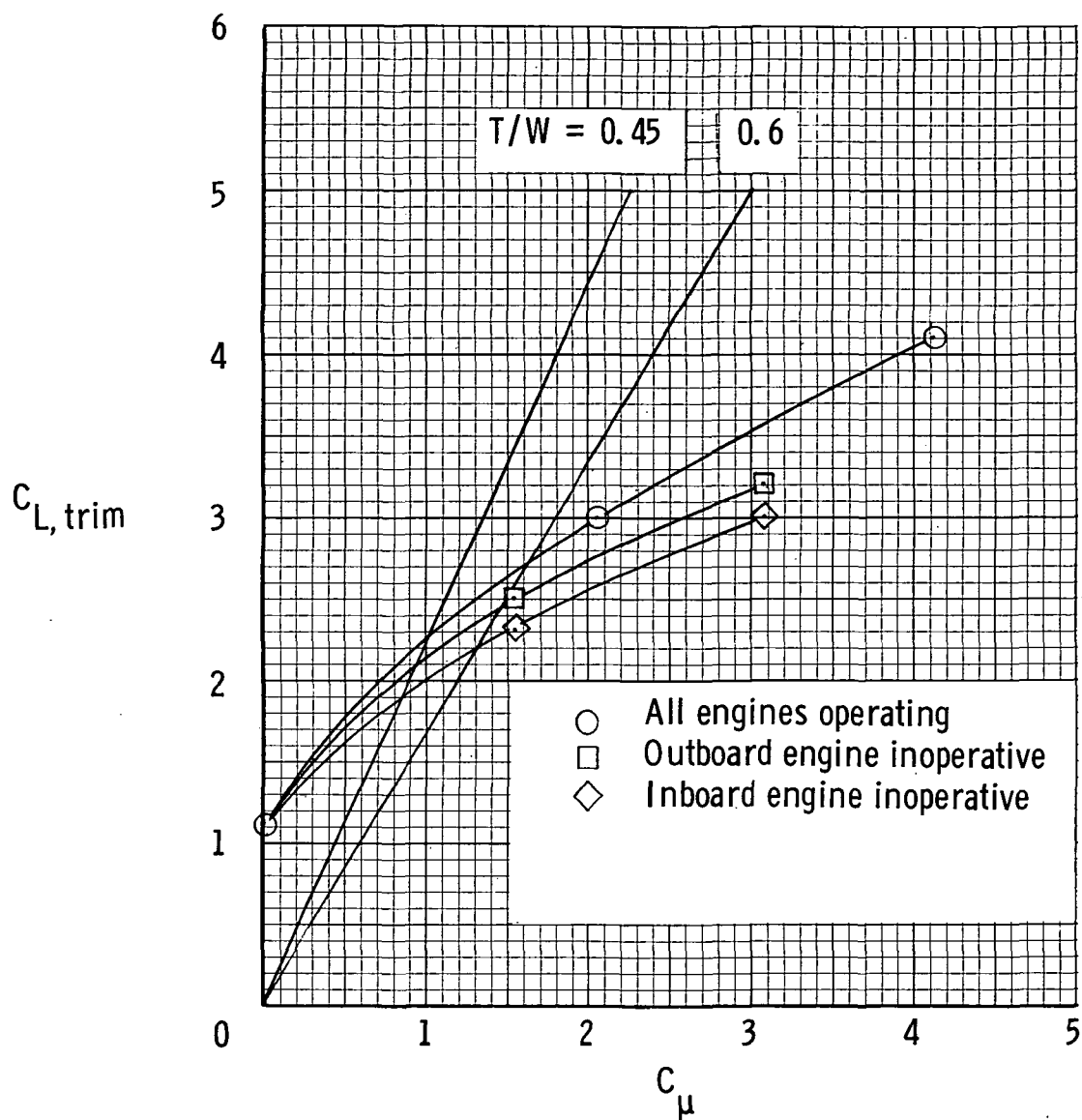


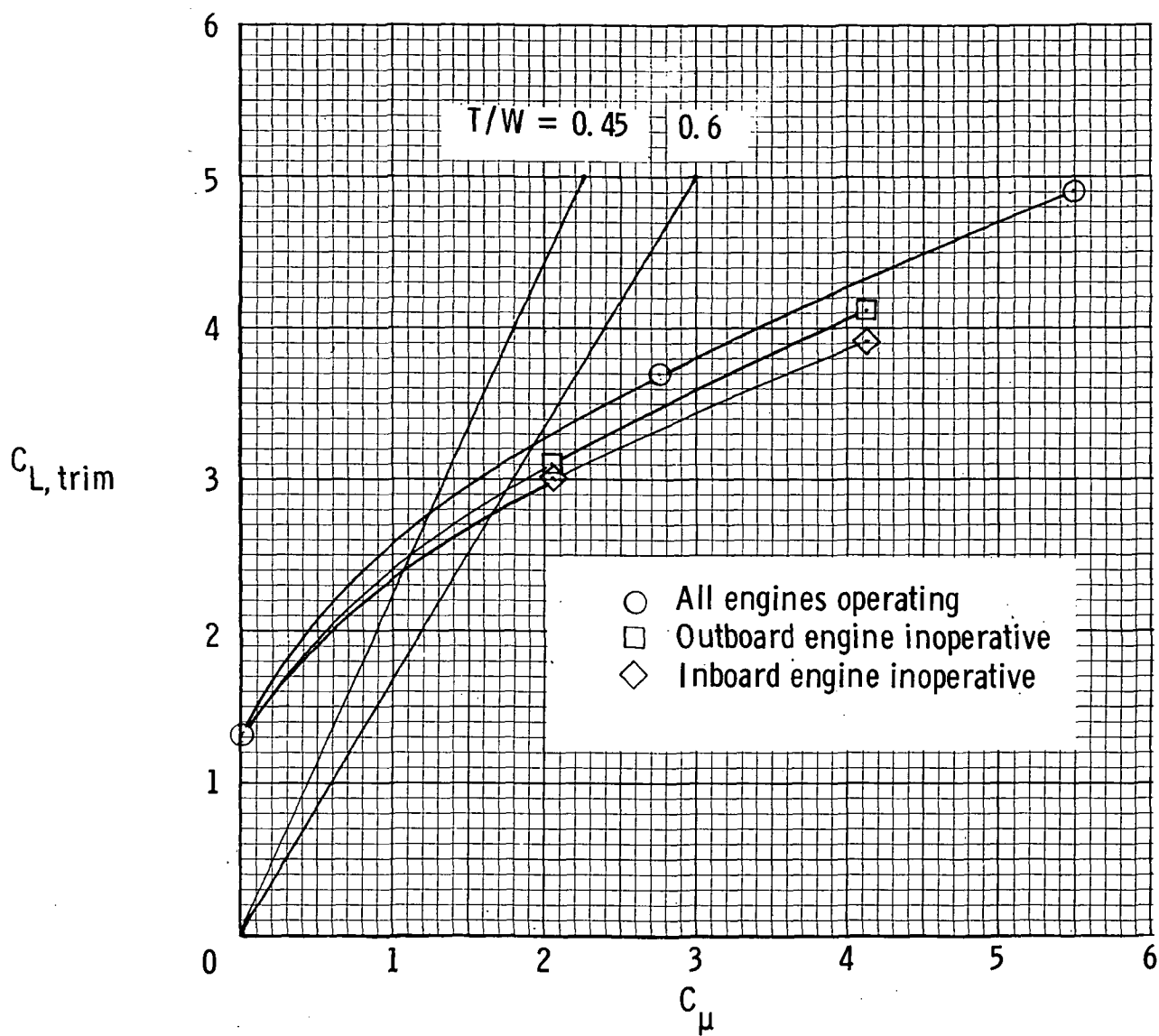
Figure 29. - Longitudinal aerodynamic characteristics of model with a wing having an aspect ratio of 7 and a partial-span flap. Inboard engine inoperative.  $\delta_f = 55^\circ$ .



(a) Partial-span flap;  $A = 7$ ;  $\delta_f = 35^\circ$ .

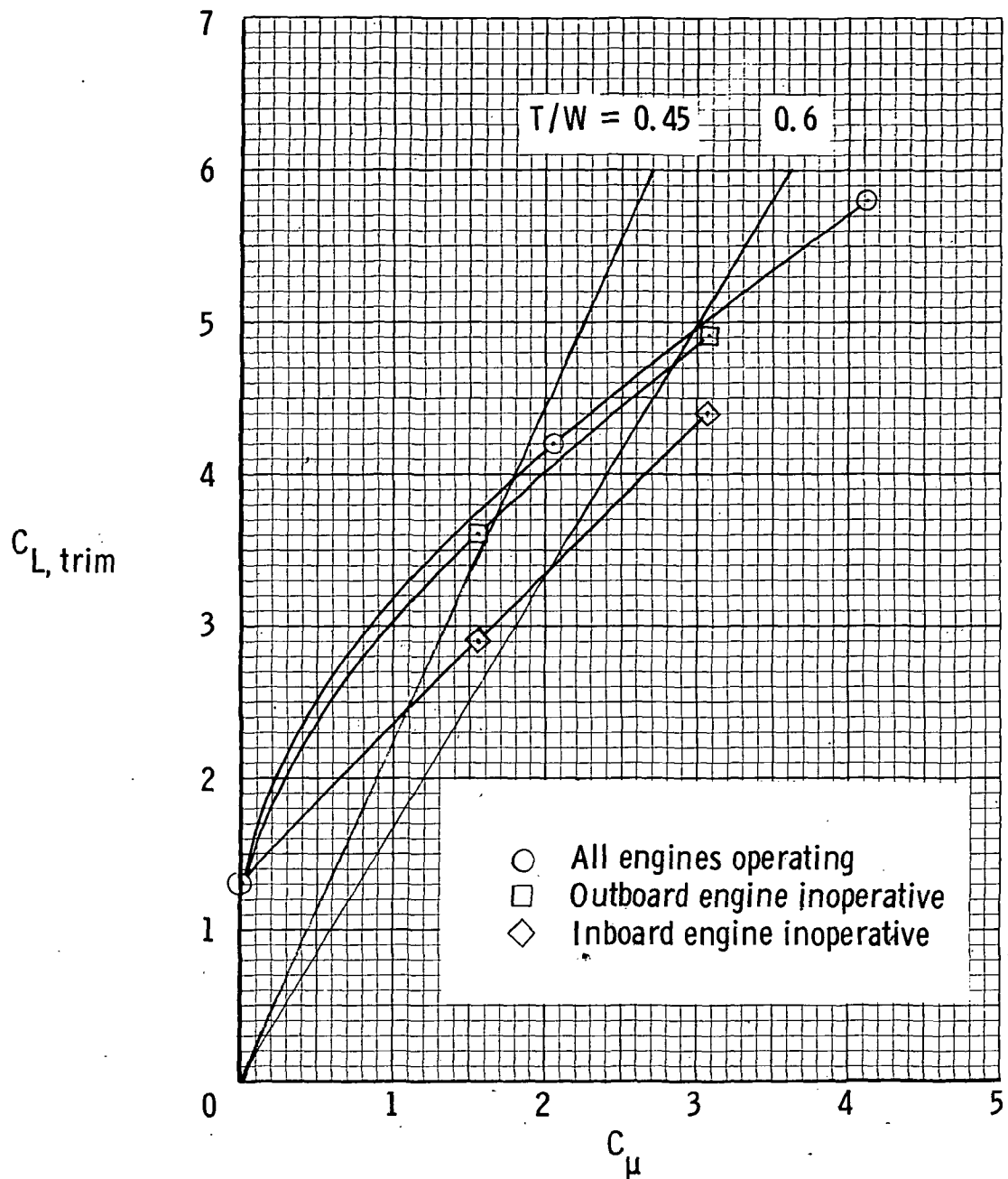
Figure 30.- Effect of engine-out condition on trim lift.  $\alpha = 1^\circ$ .





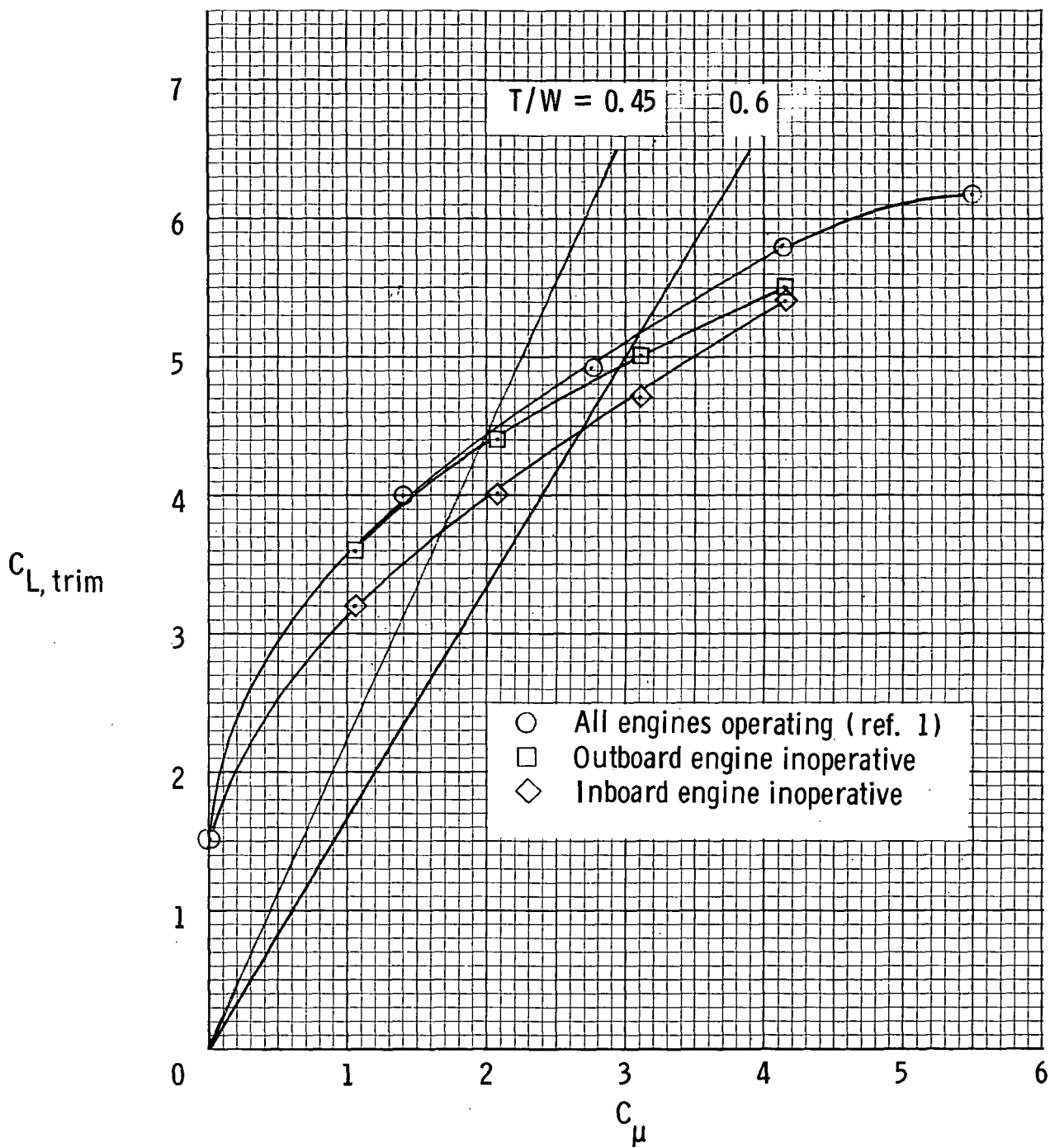
(b) Full-span flap;  $A = 5.25$ ;  $\delta_f = 35^\circ$ .

Figure 30. - Continued.



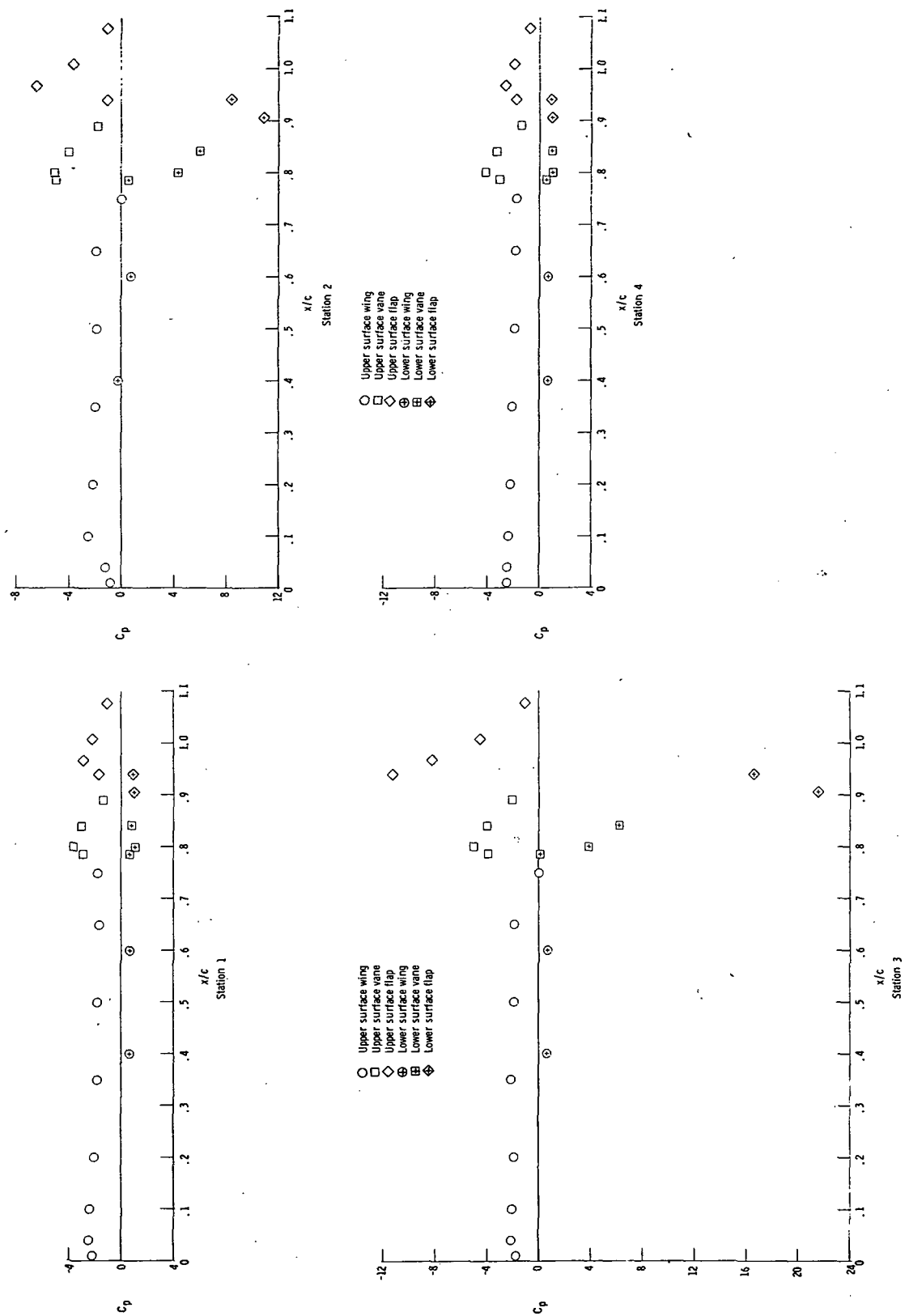
(c) Partial-span flap;  $A = 7$ ;  $\delta_f = 55^\circ$ .

Figure 30. - Continued.



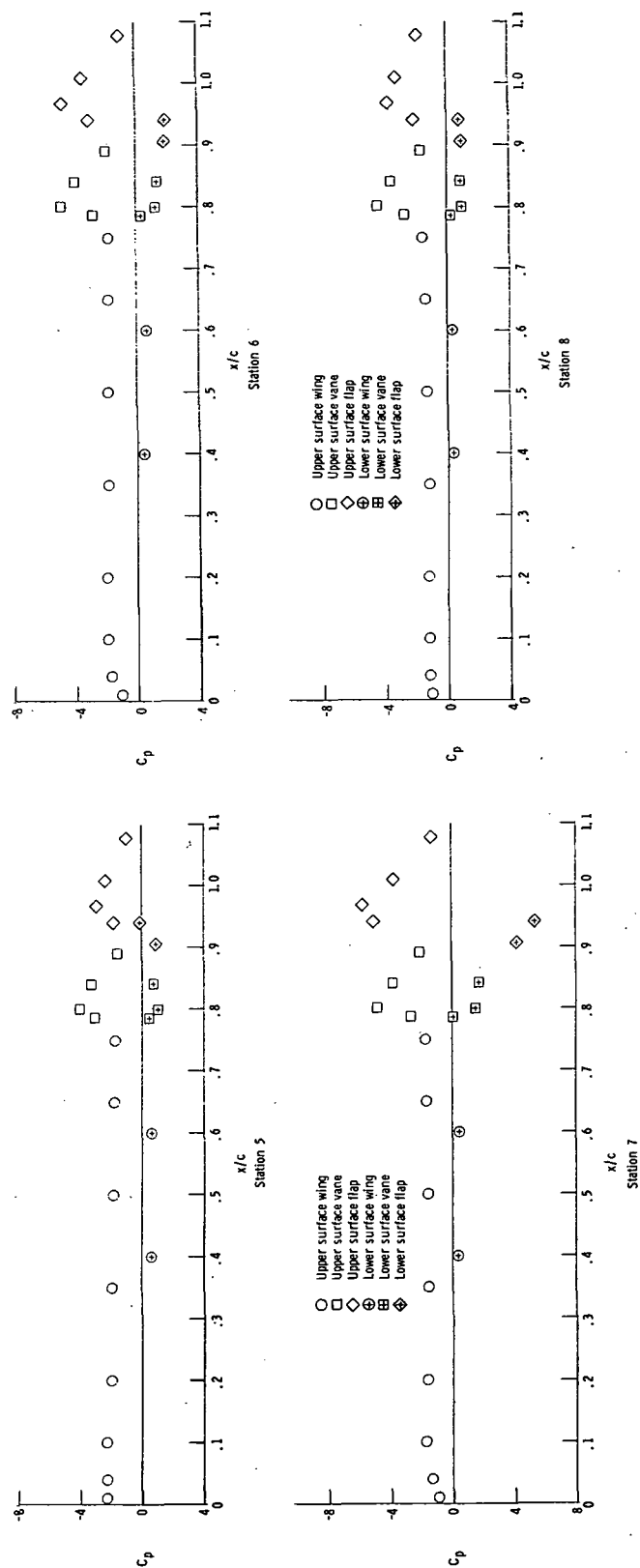
(d) Full-span flap;  $A = 7$ ;  $\delta_f = 55^\circ$ .

Figure 30.- Concluded.



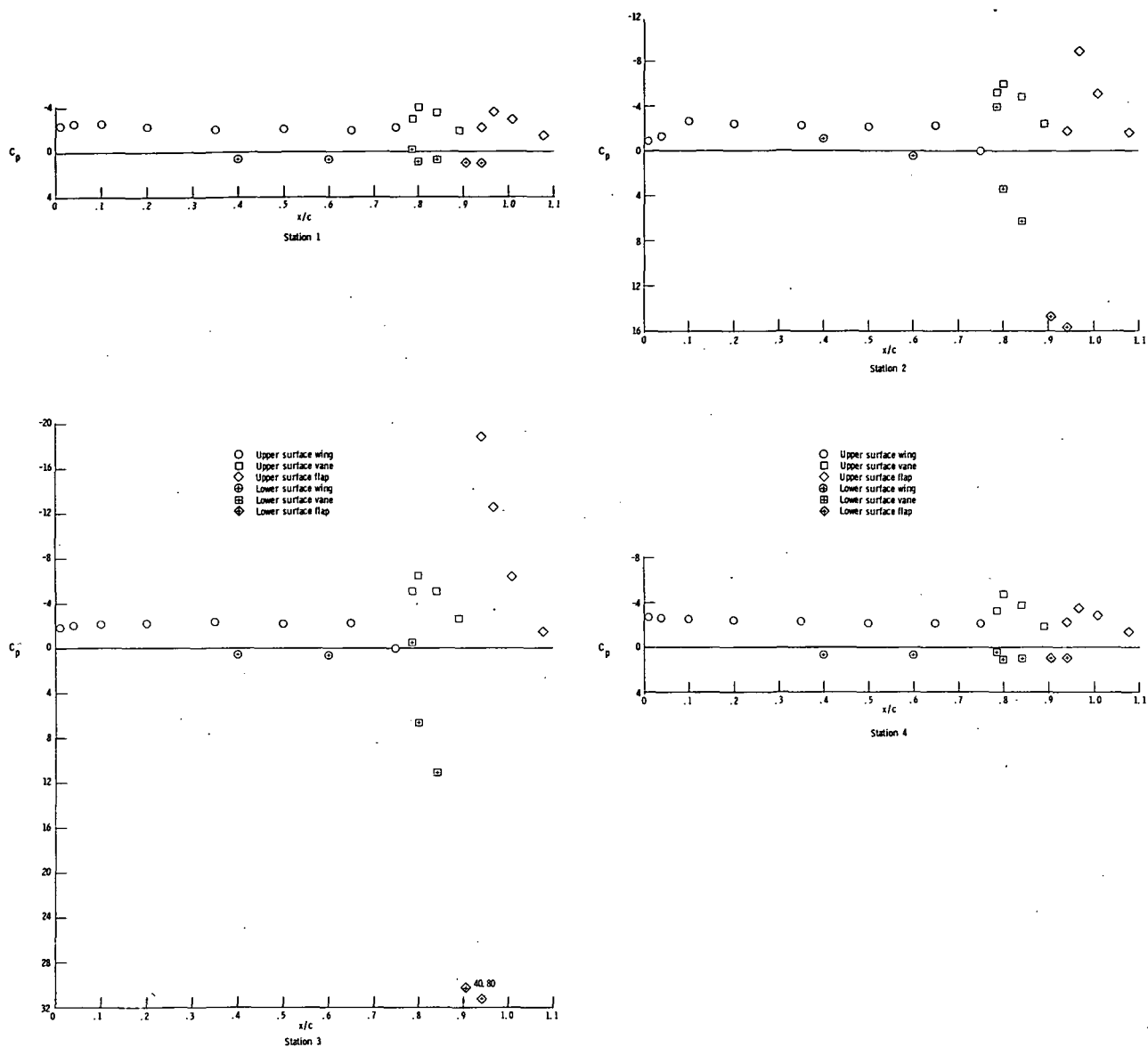
(a) Stations 1 to 4.

Figure 31.- Pressure distributions on wing and flap of model. All engines operating. Full-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 2.05$ ;  $A = 7$ .



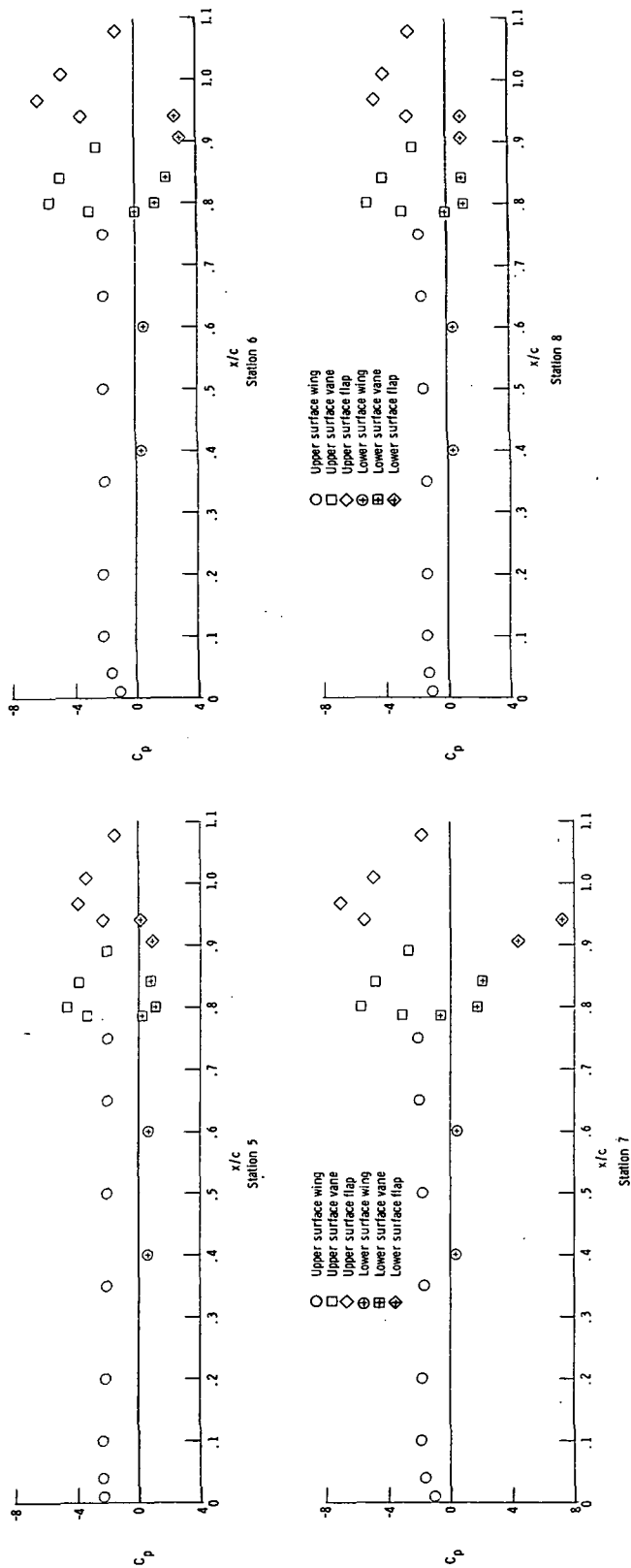
(b) Stations 5 to 8.

Figure 31. - Concluded.



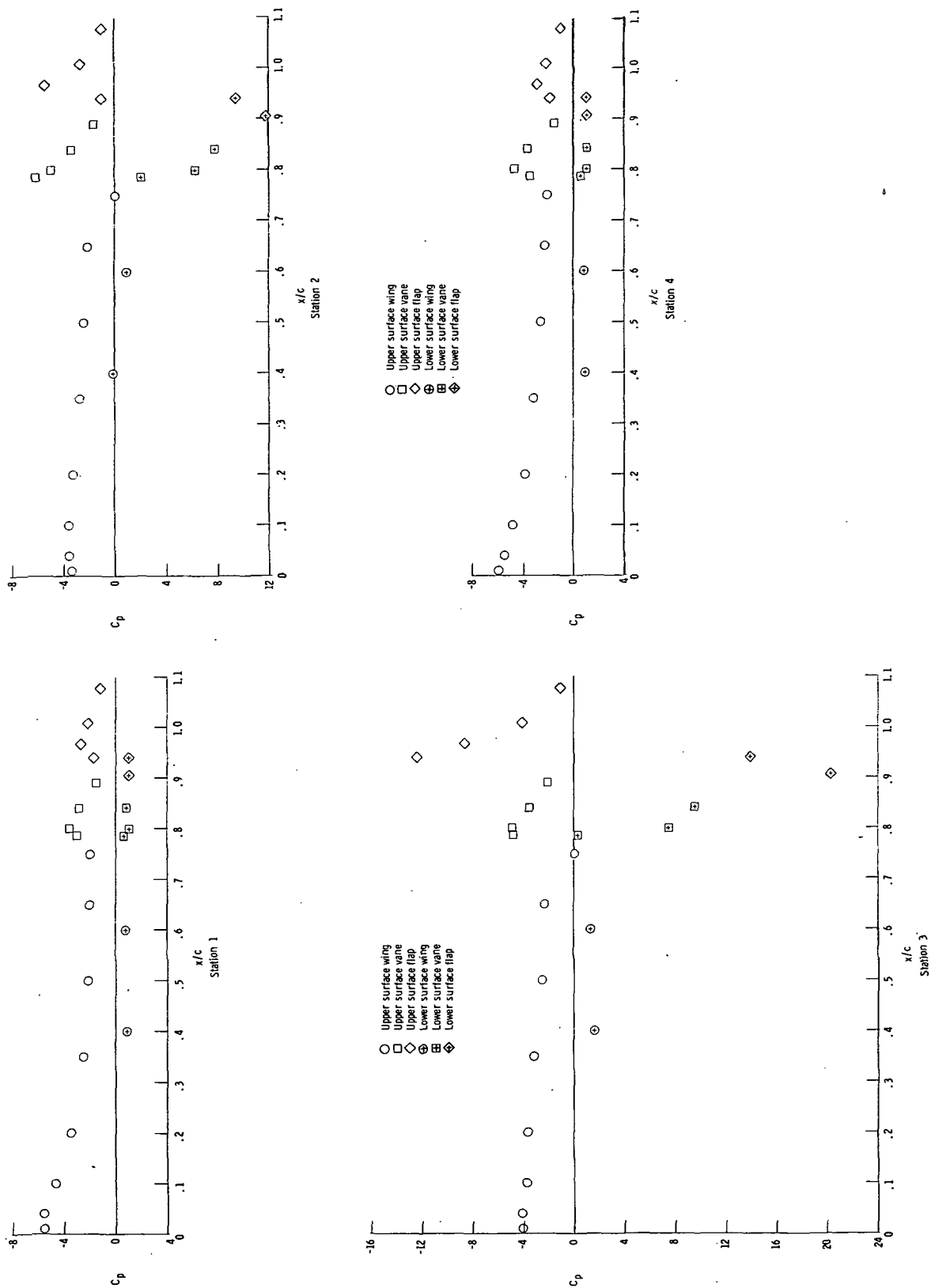
(a) Stations 1 to 4.

Figure 32.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 4.11$ ;  $A = 7$ .



(b) Stations 5 to 8.

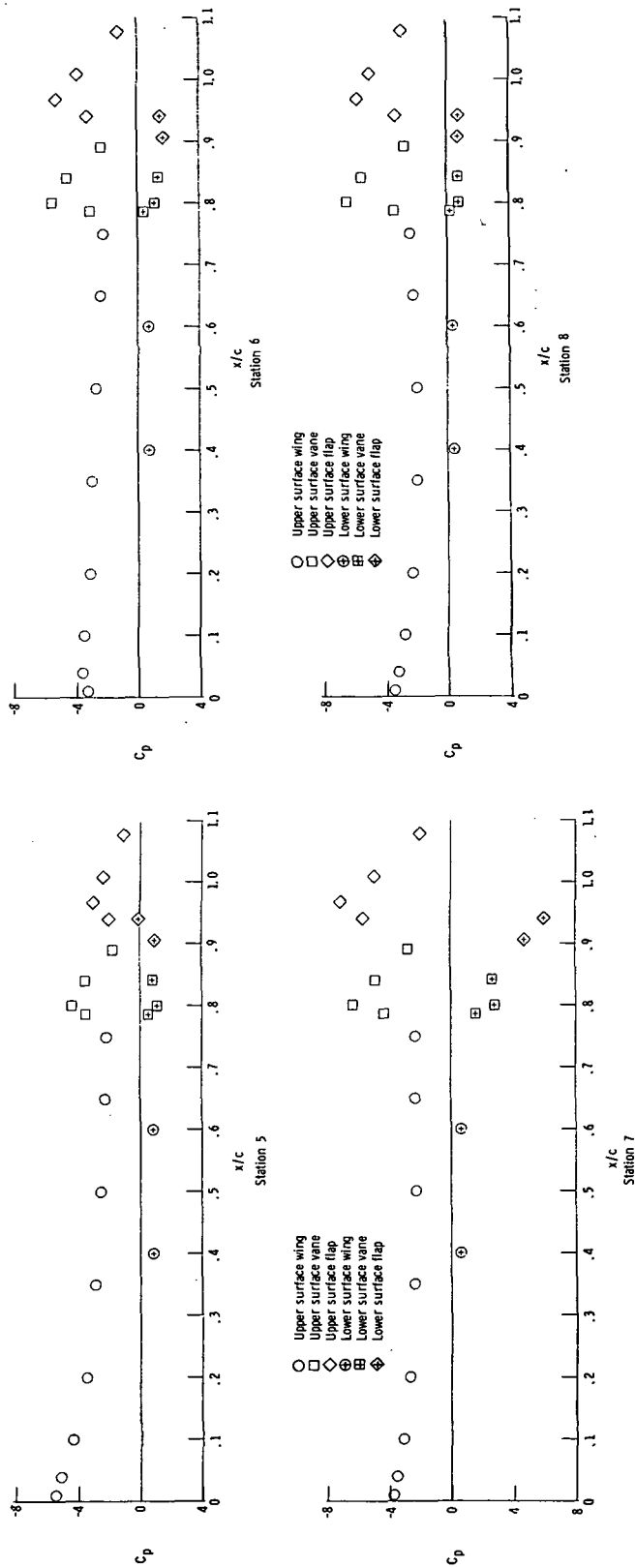
Figure 32. - Concluded.



(a) Stations 1 to 4.

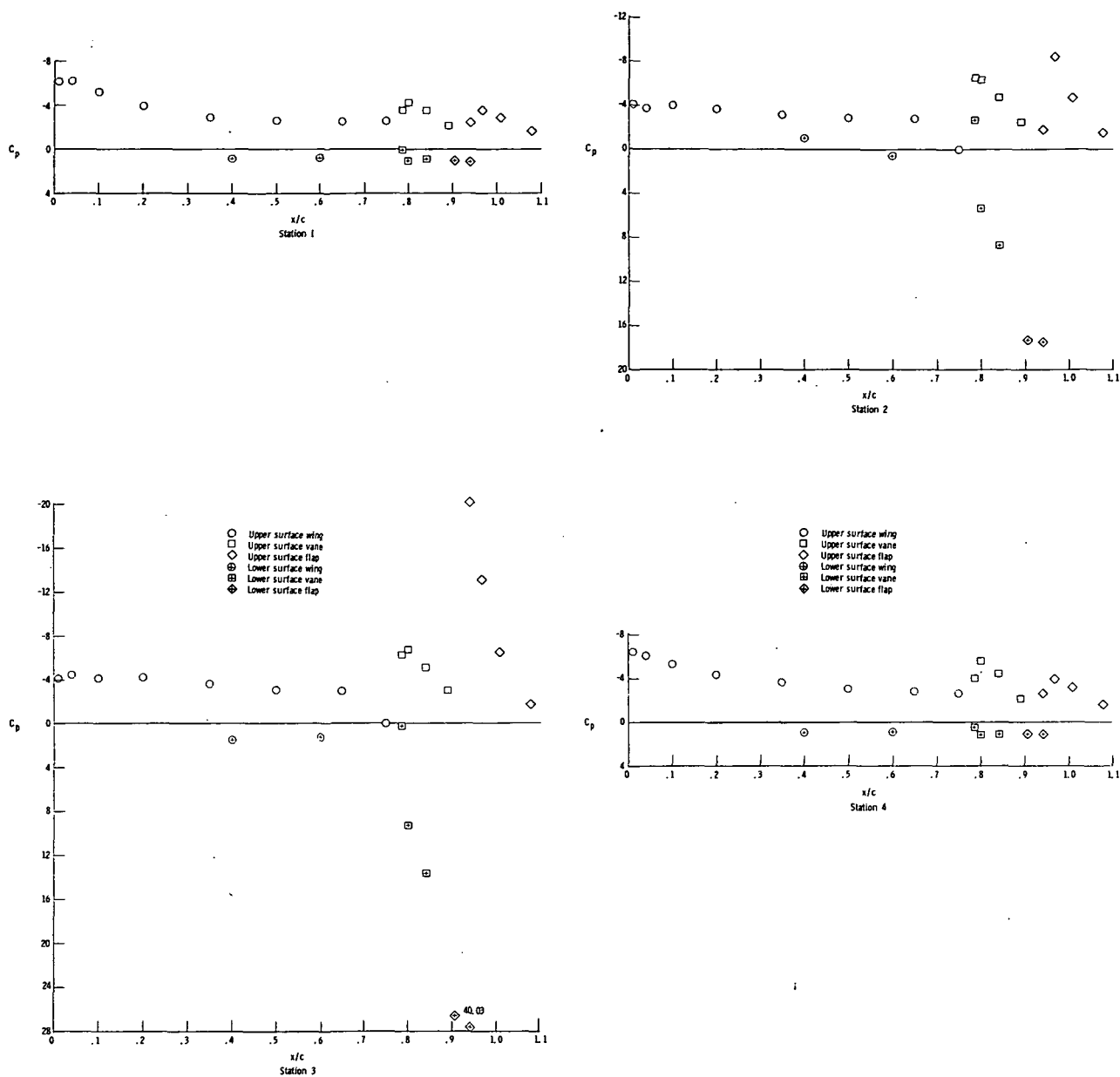
Figure 33.- Pressure distributions on wing and flap of model. All engines operating. Full-span flap.  
 $\delta f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 2.05$ ;  $A = 7$ .





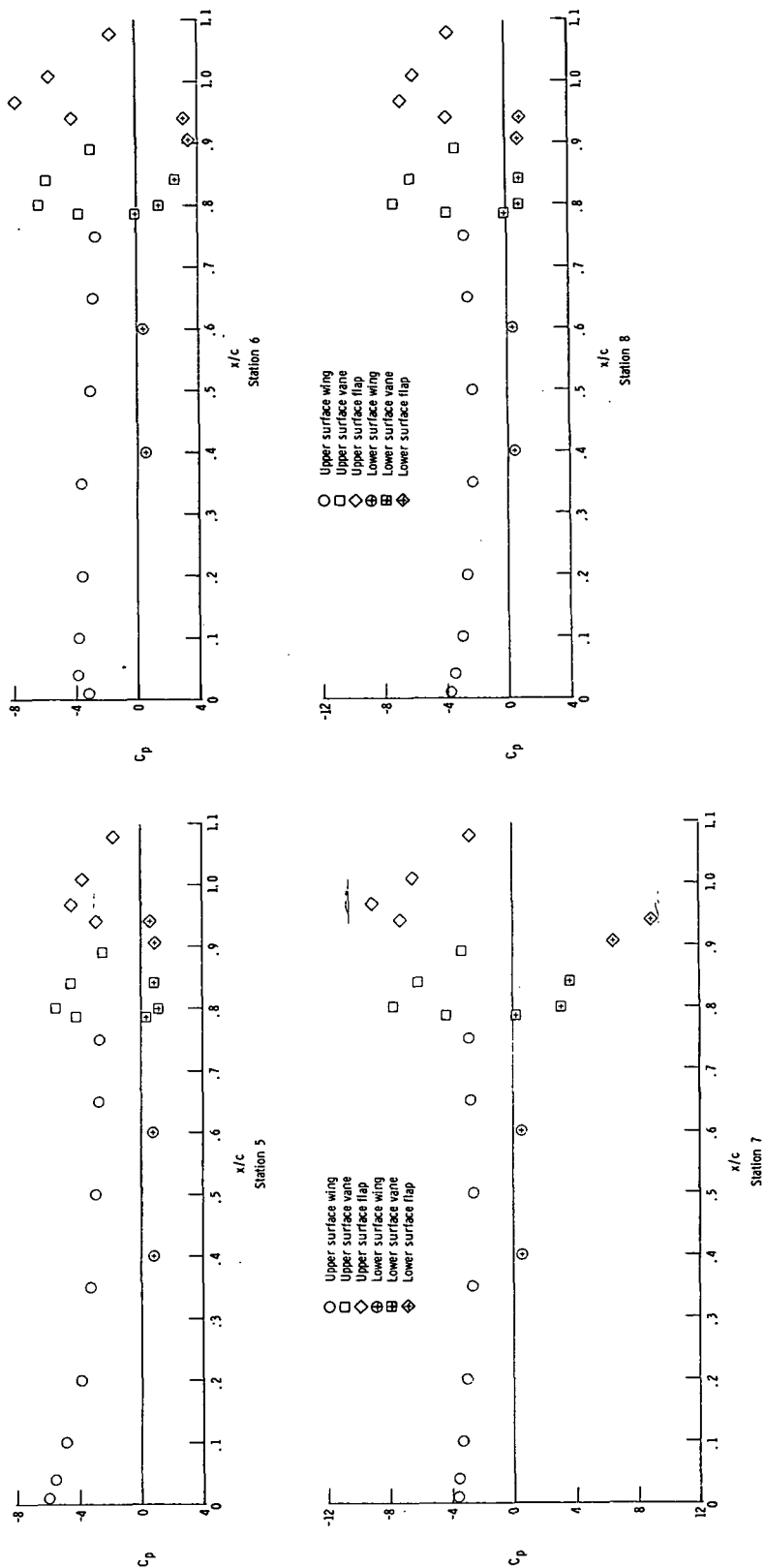
(b) Stations 5 to 8.

Figure 33. - Concluded.



(a) Stations 1 to 4.

Figure 34.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 4.11$ ;  $A = 7$ .



(b) Stations 5 to 8.

Figure 34. - Concluded.

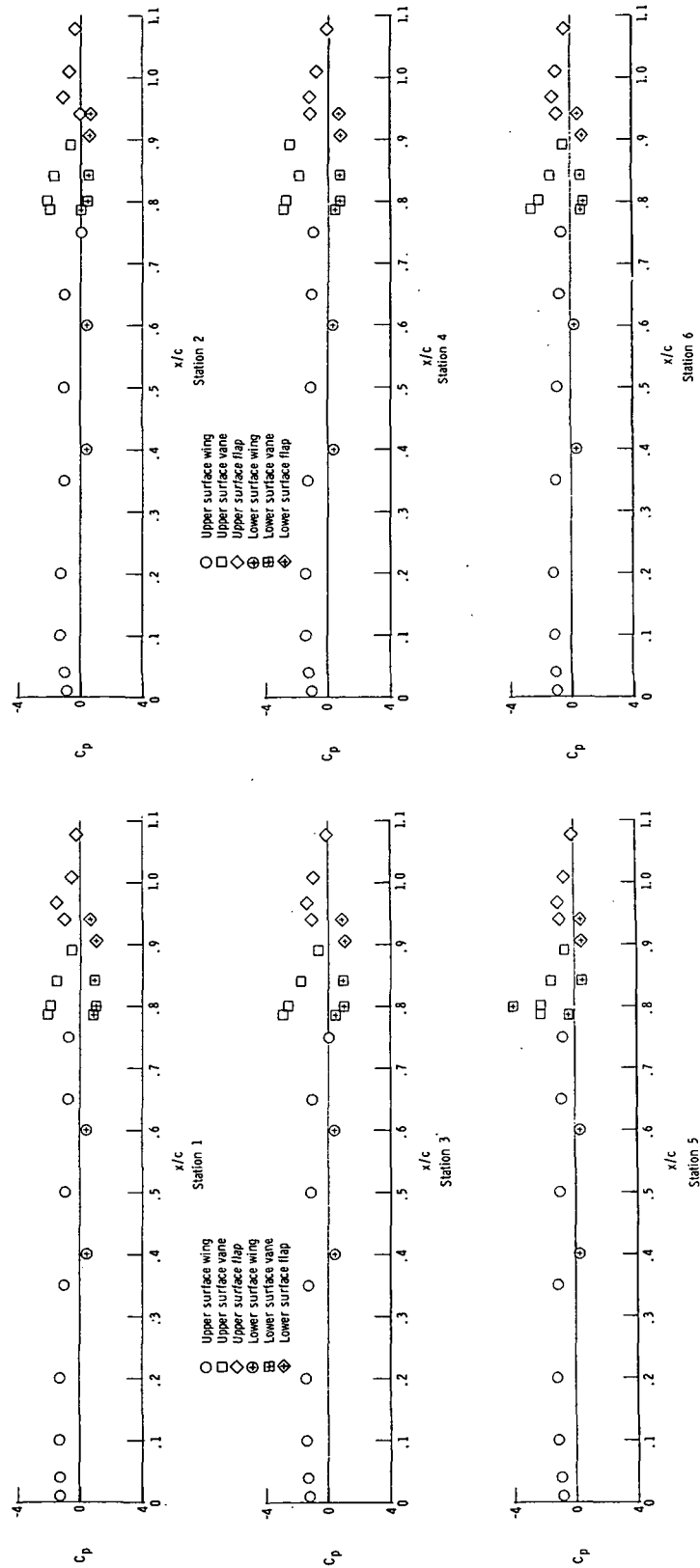


Figure 35. - Pressure distributions on wing and flap of model.  $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 0$ ;  $A = 7$ .

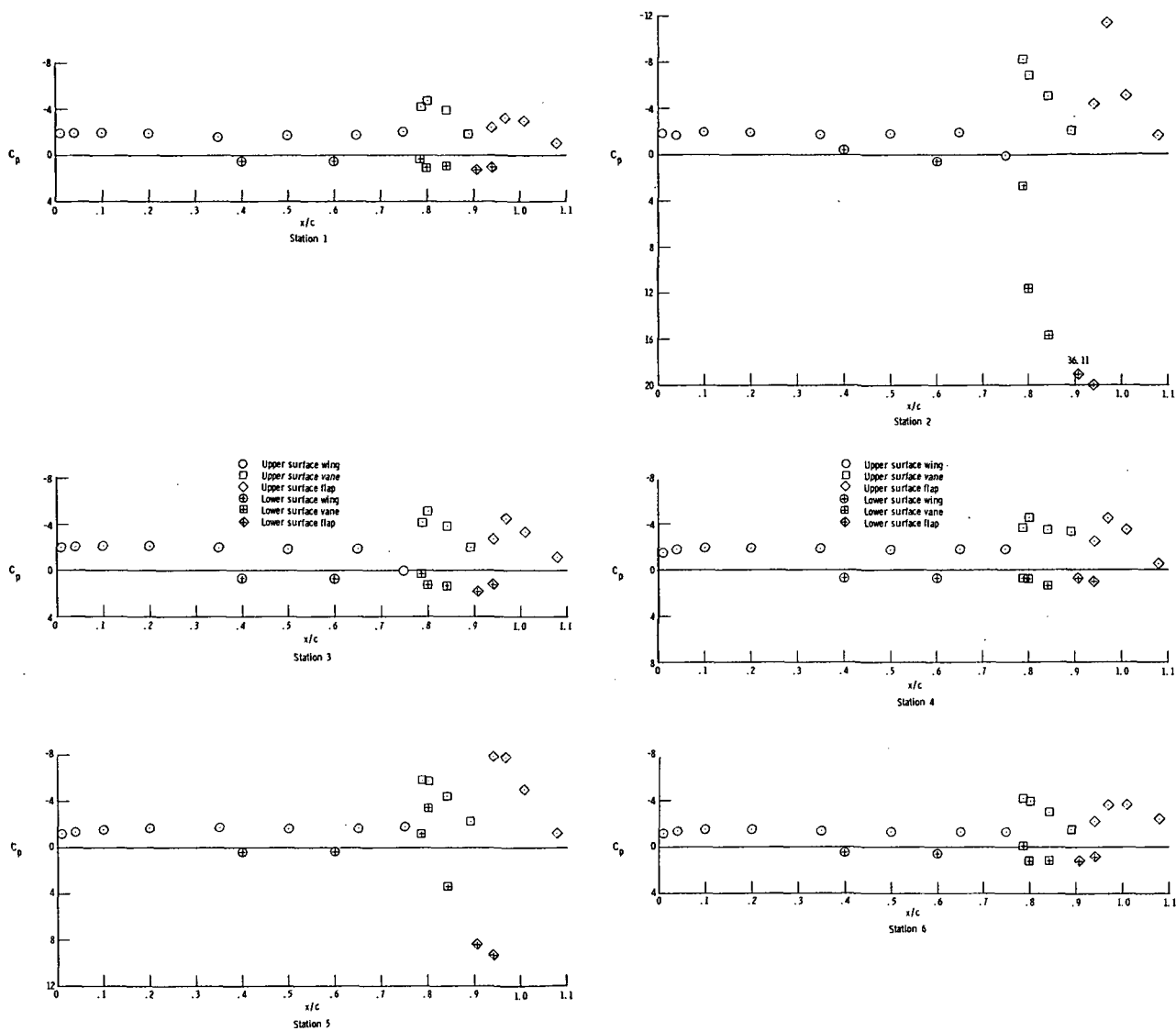


Figure 36:- Pressure distributions on wing and flap of model. All engines operating.  
 Partial-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 2.05$ ;  $A = 7$ .

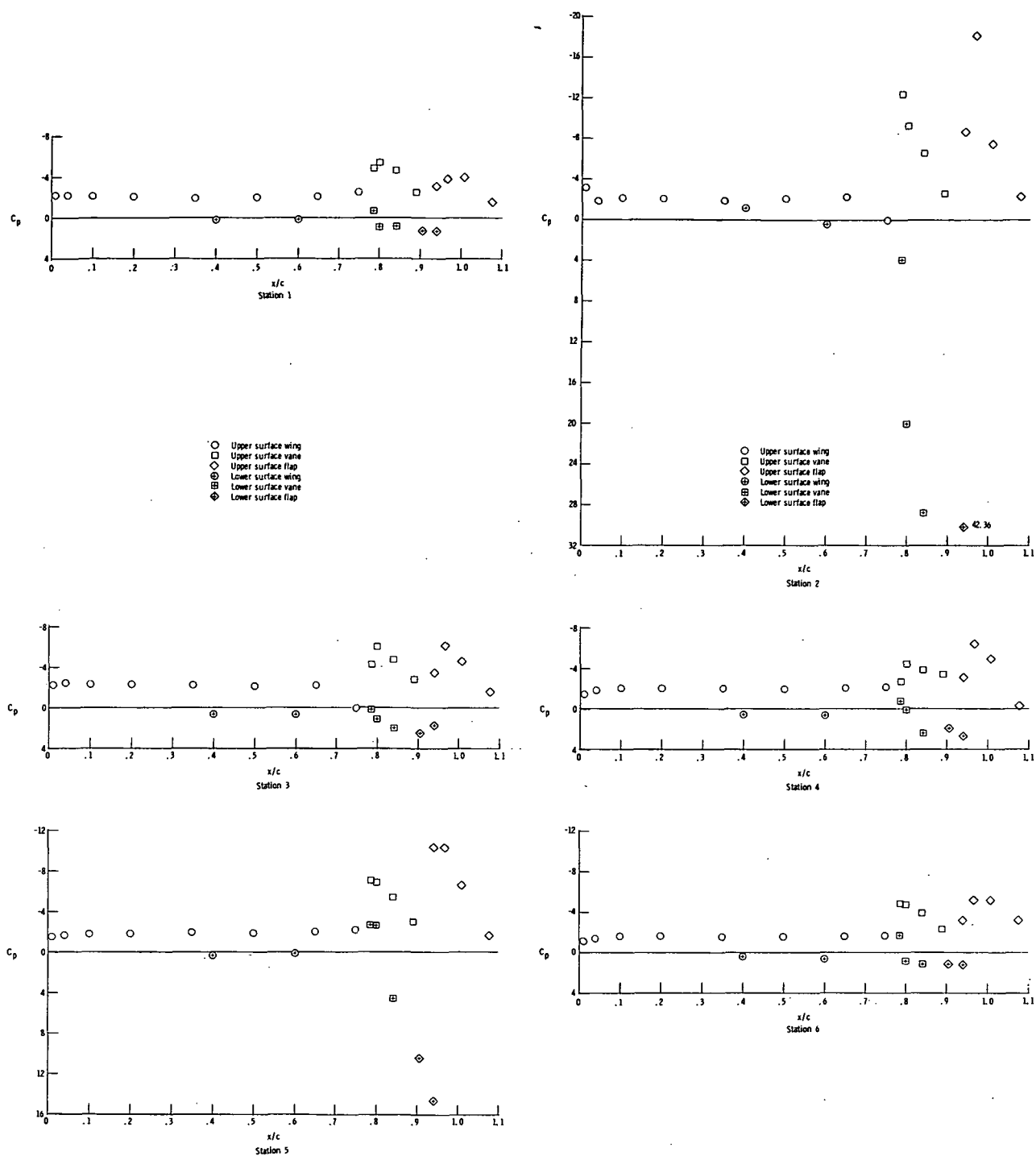


Figure 37.- Pressure distributions on wing and flap of model. All engines operating. Partial-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 4.11$ ;  $A = 7$ .

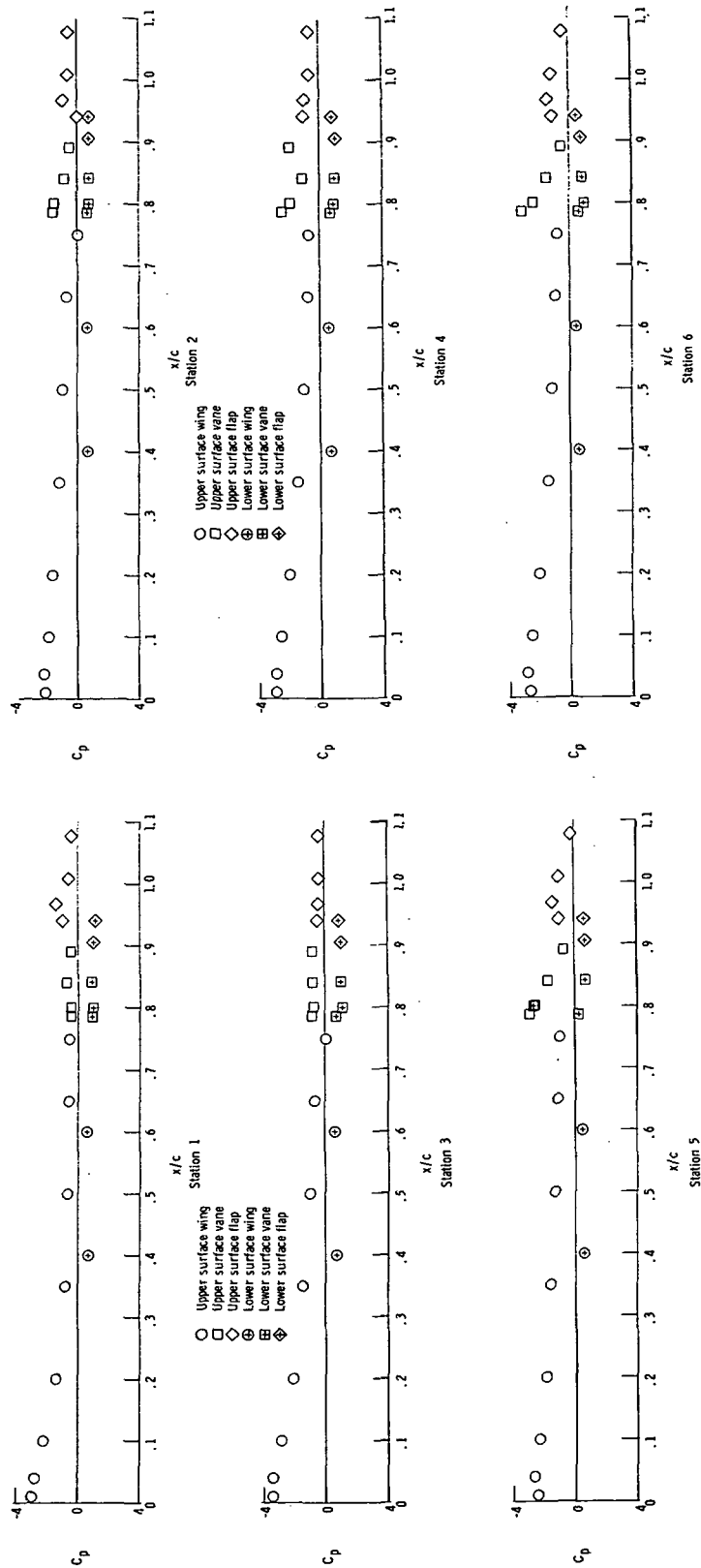


Figure 38. - Pressure distributions on wing and flap of model. Partial-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 0$ ;  $A = 7$ .

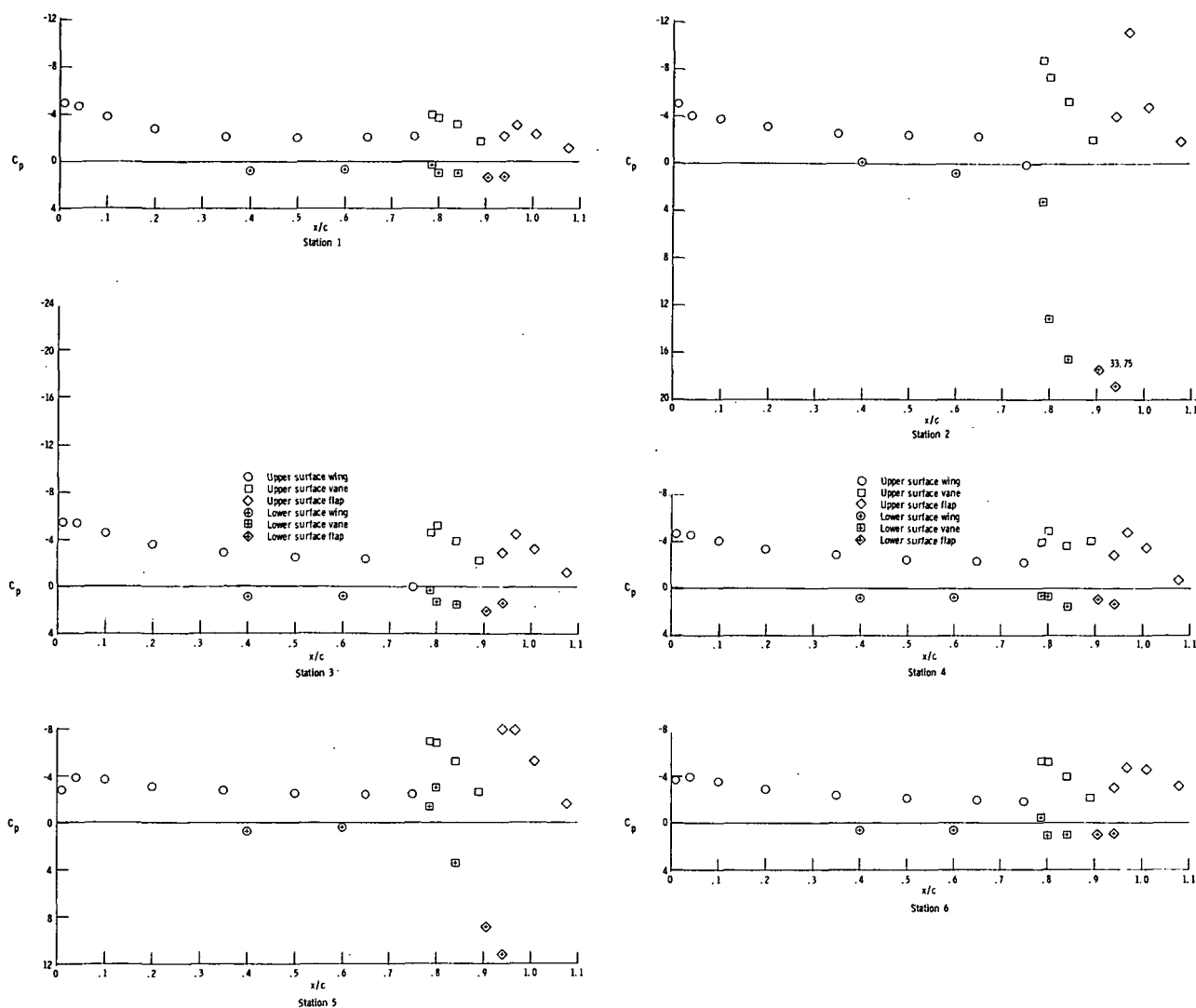


Figure 39.- Pressure distributions on wing and flap of model. All engines operating.  
 Partial-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 2.05$ ;  $A = 7$ .



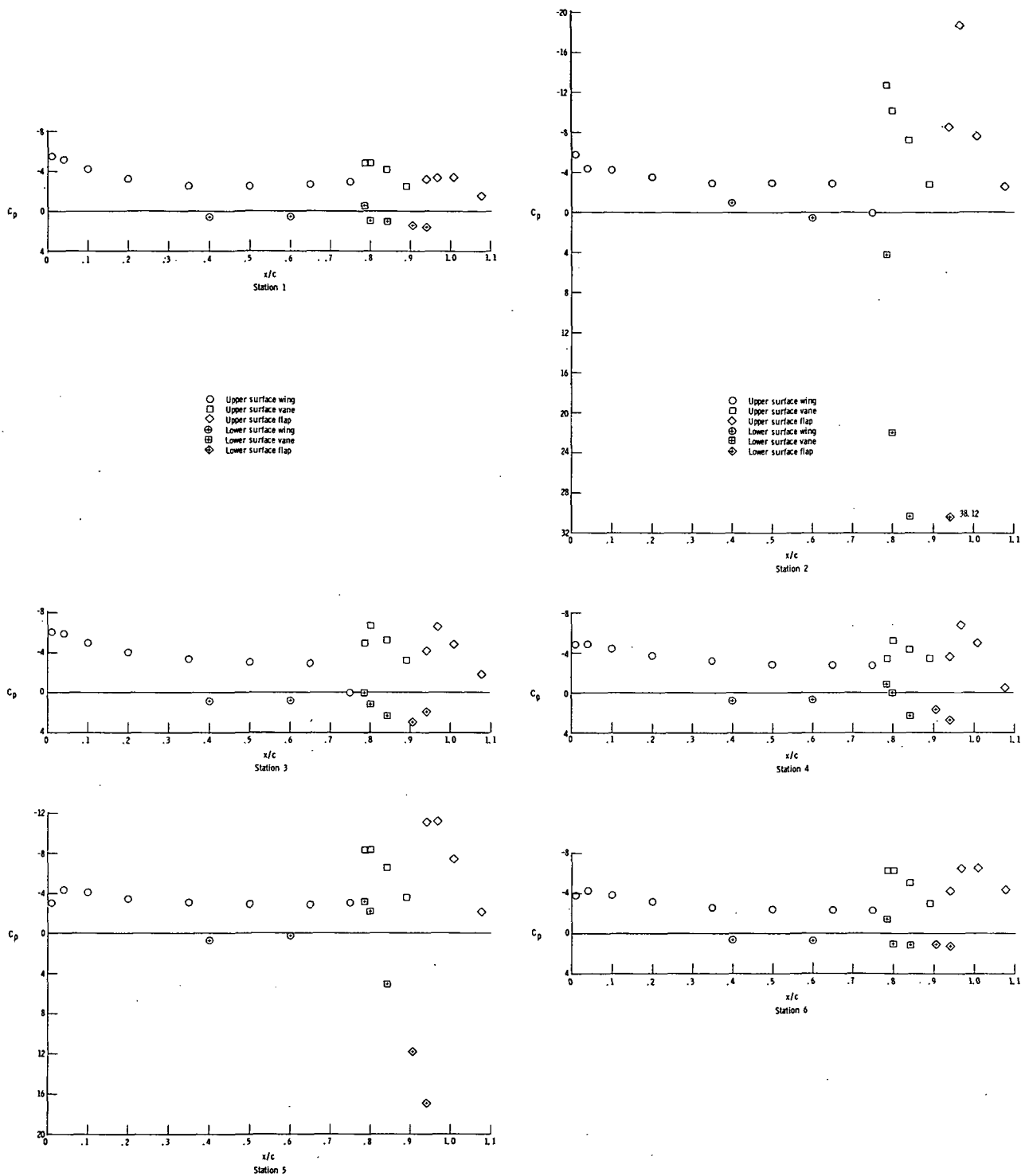


Figure 40.- Pressure distributions on wing and flap of model. All engines operating. Partial-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 4.11$ ;  $A = 7$ .

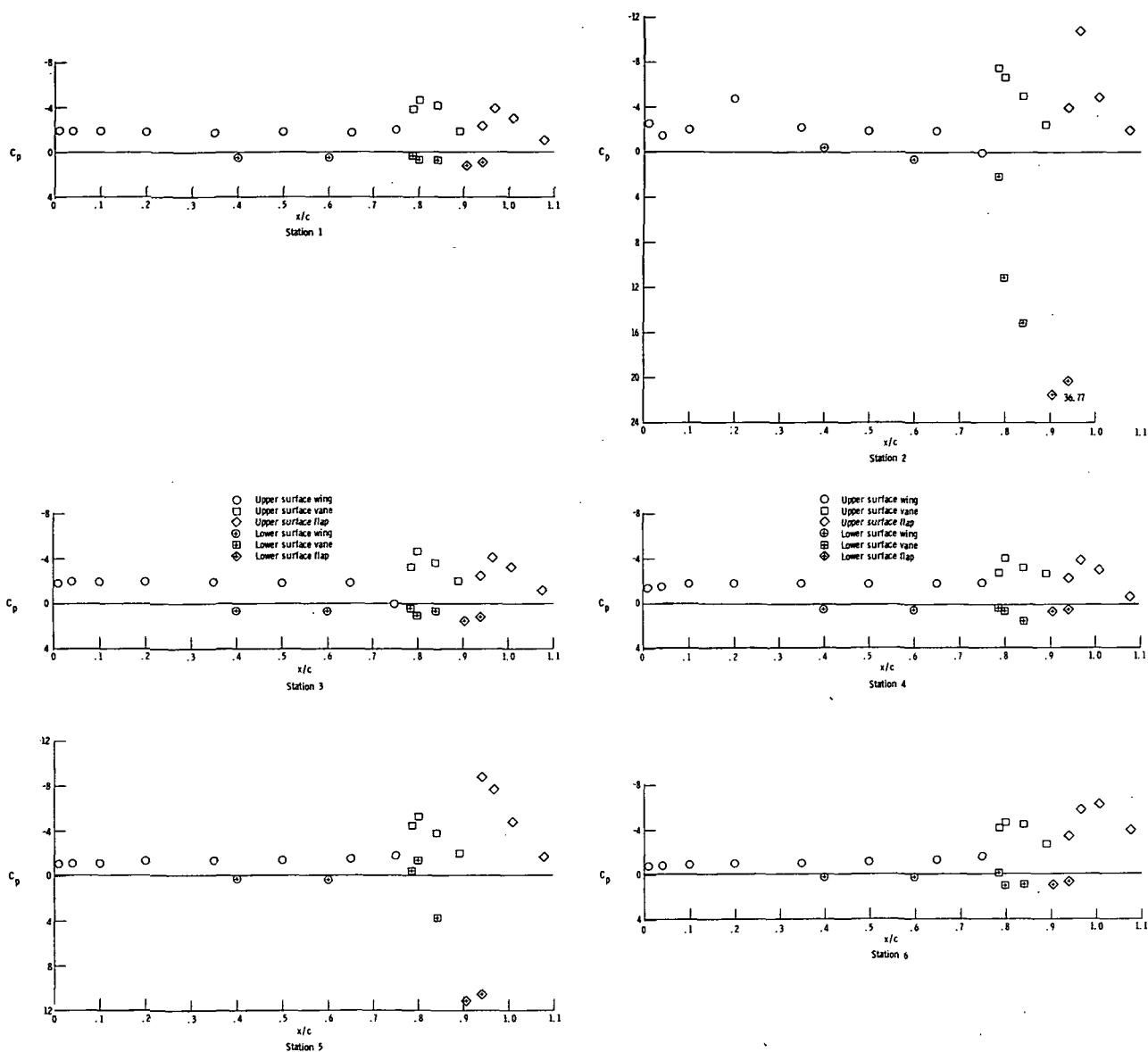


Figure 41.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 2.75$ ;  $A = 5.25$ .

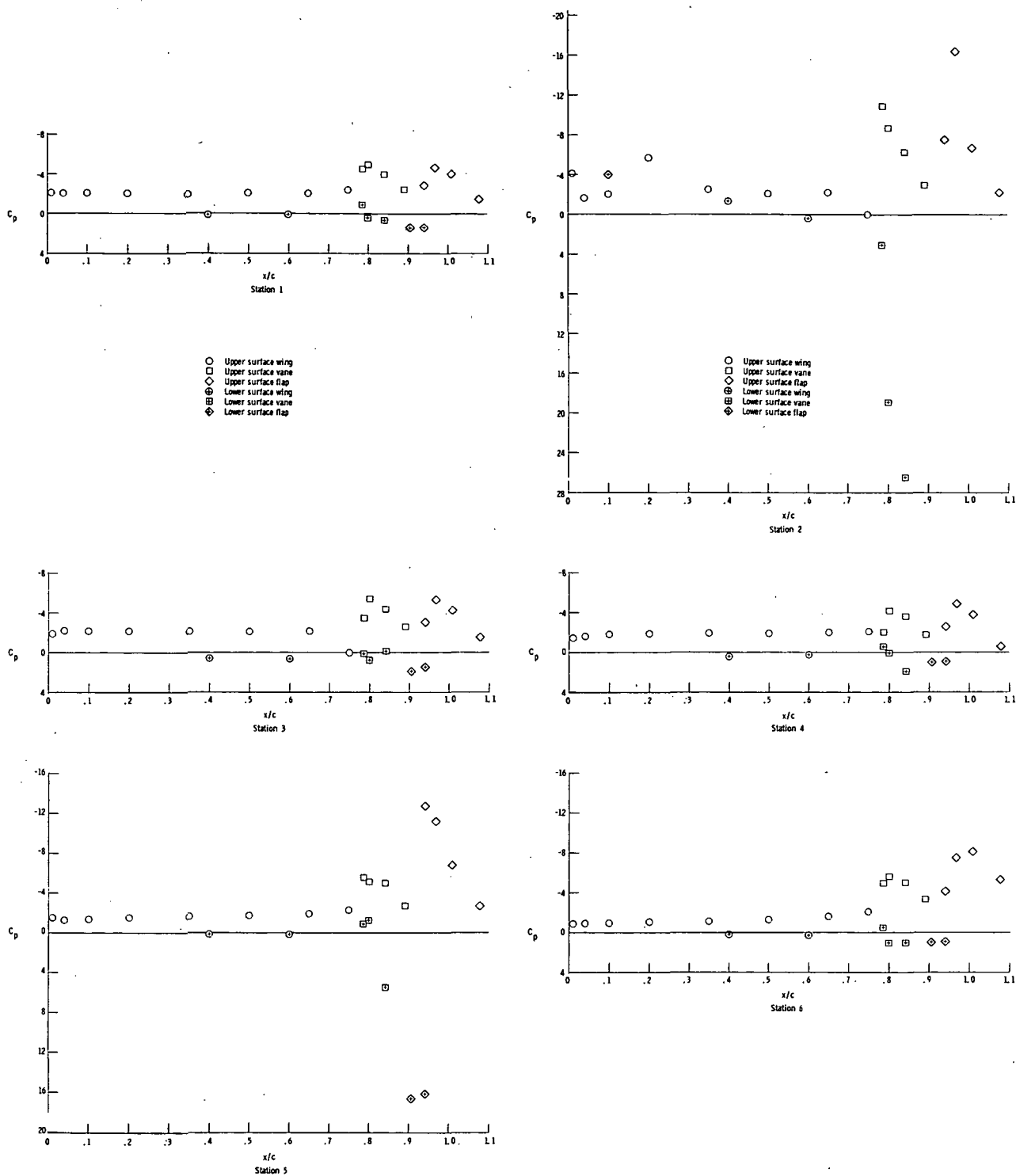


Figure 42. - Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 5.49$ ;  $A = 5.25$ .

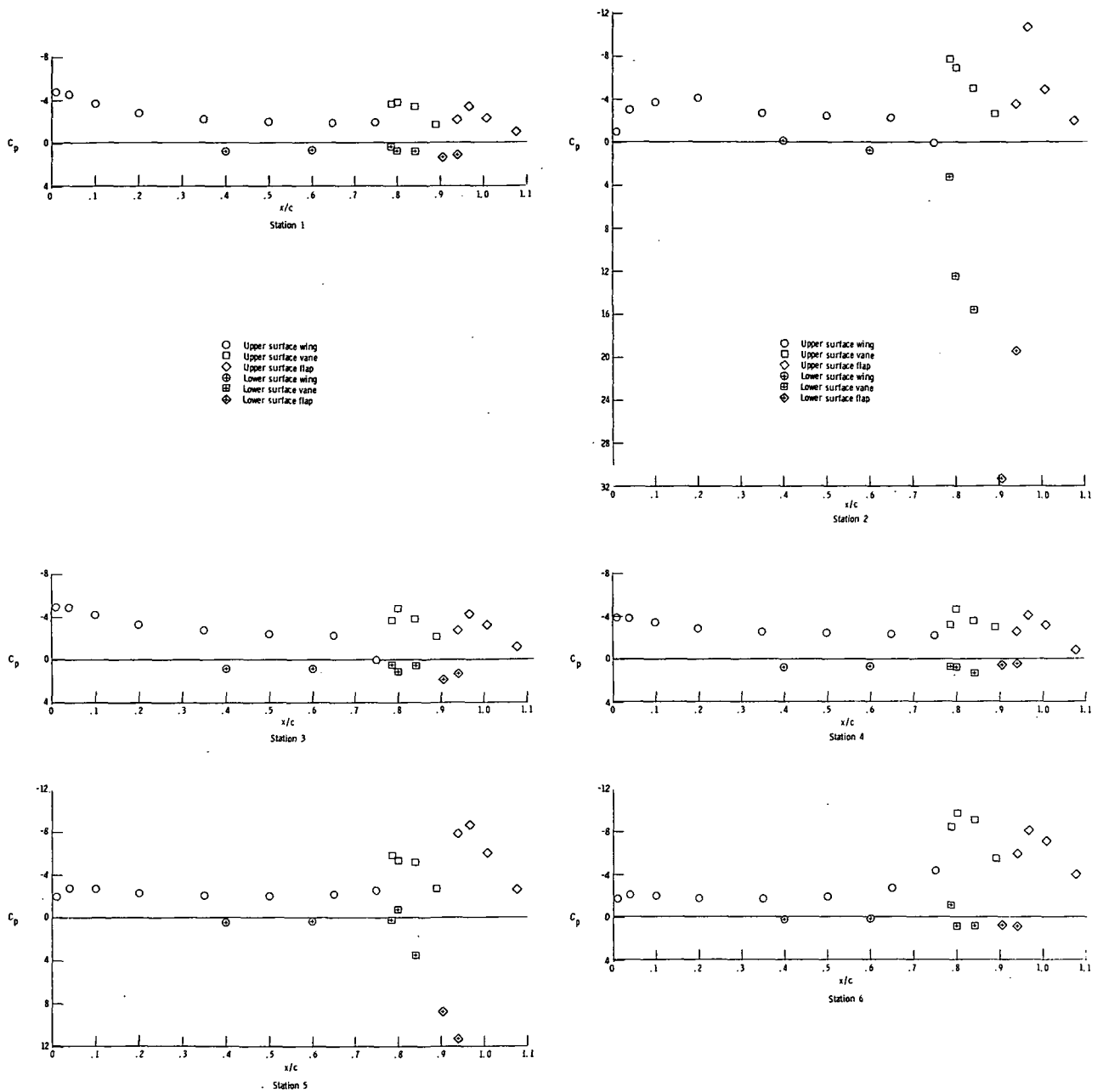


Figure 43. - Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 2.75$ ;  $A = 5.25$ .

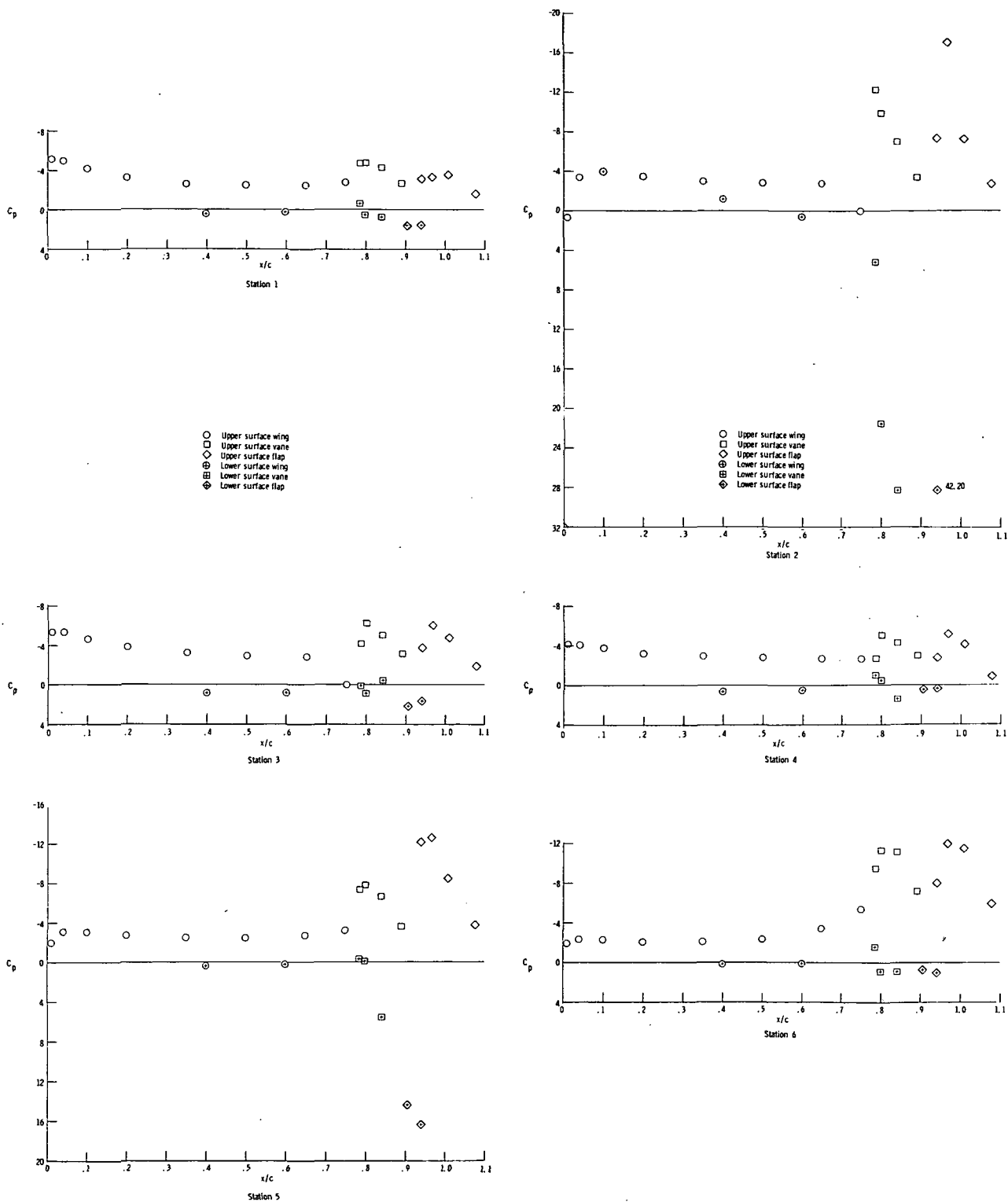
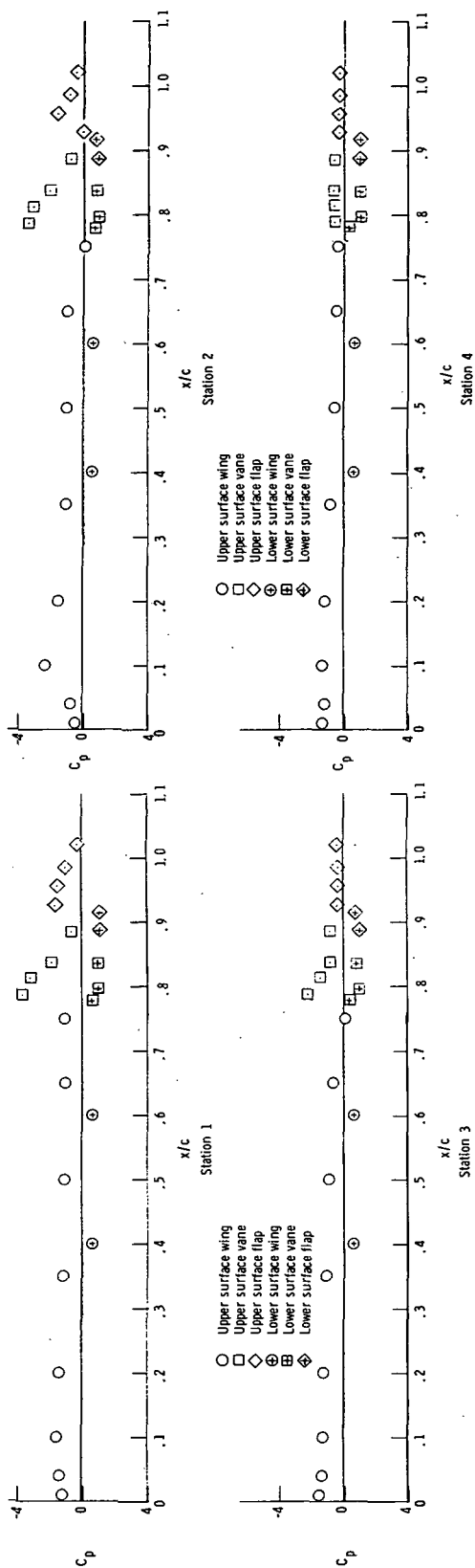
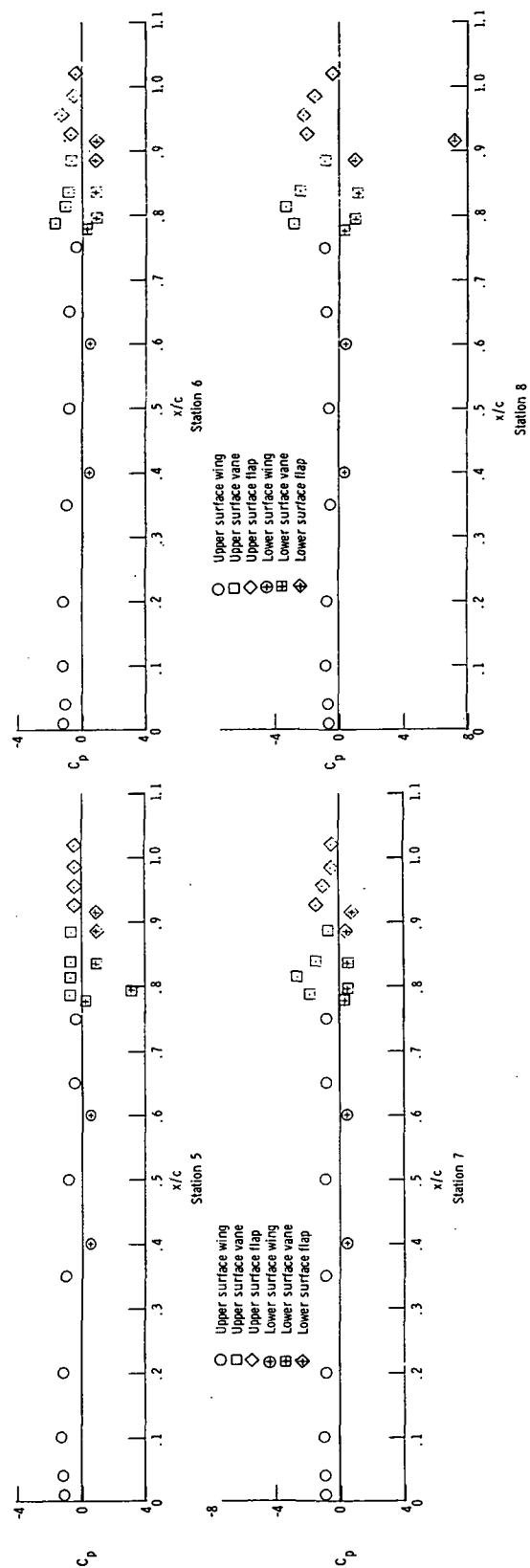


Figure 44.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_{\mu} = 5.49$ ;  $A = 5.25$ .

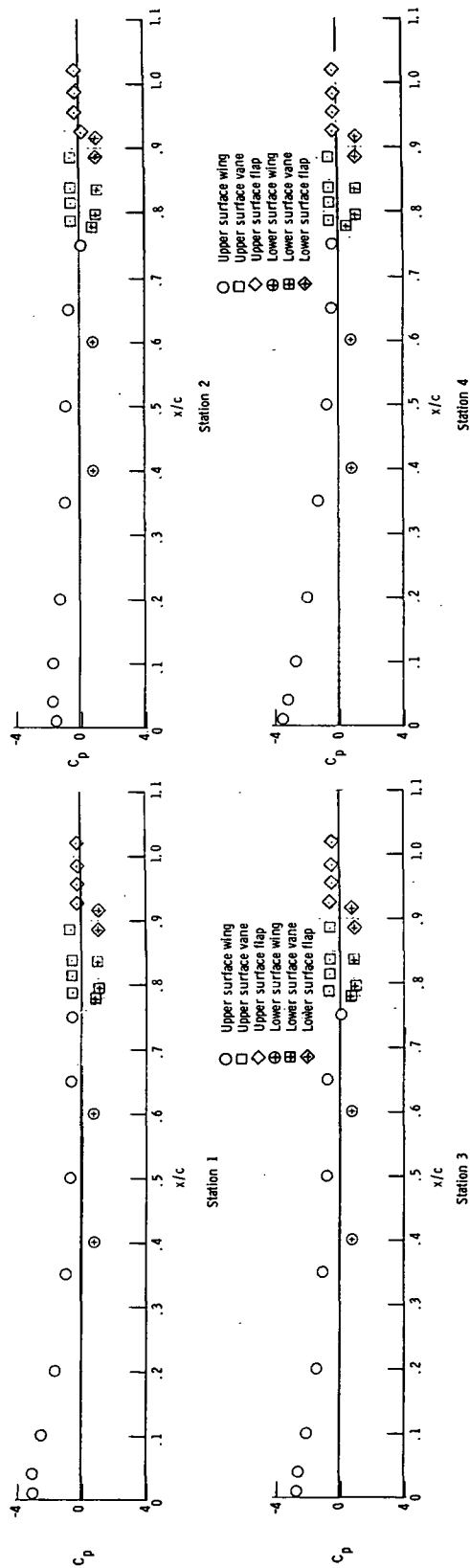


(a) Stations 1 to 4.

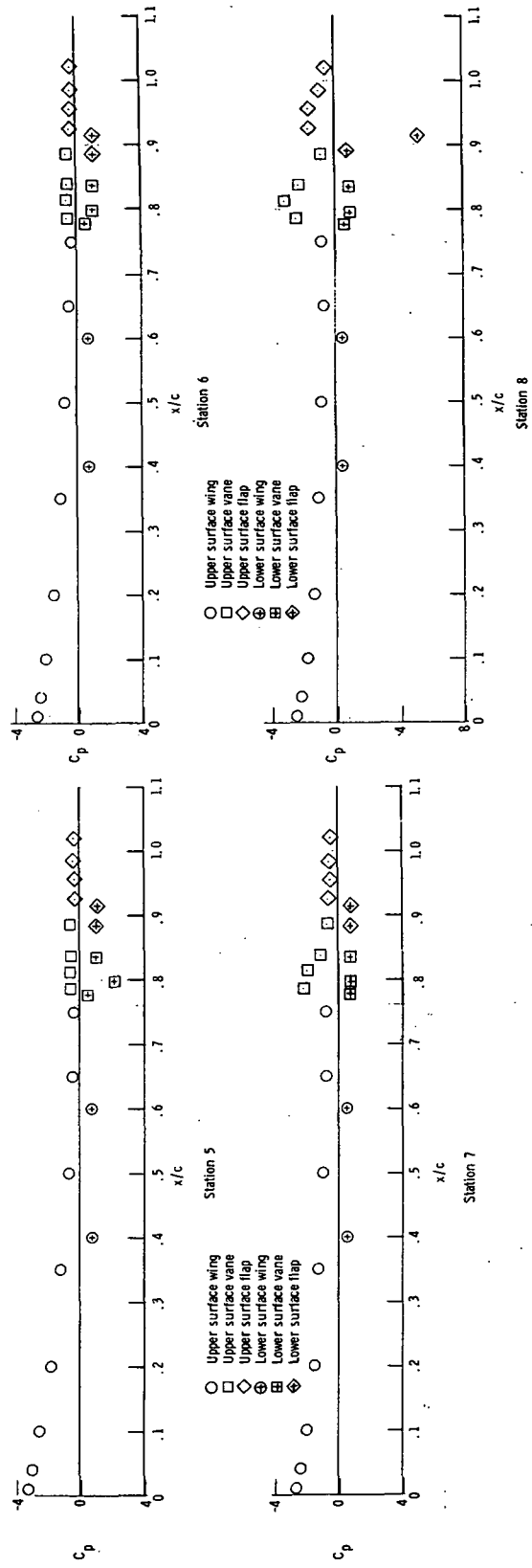


(b) Stations 5 to 8.

Figure 45.- Pressure distributions on wing and flap of model. Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 0$ ;  $A = 7$ .

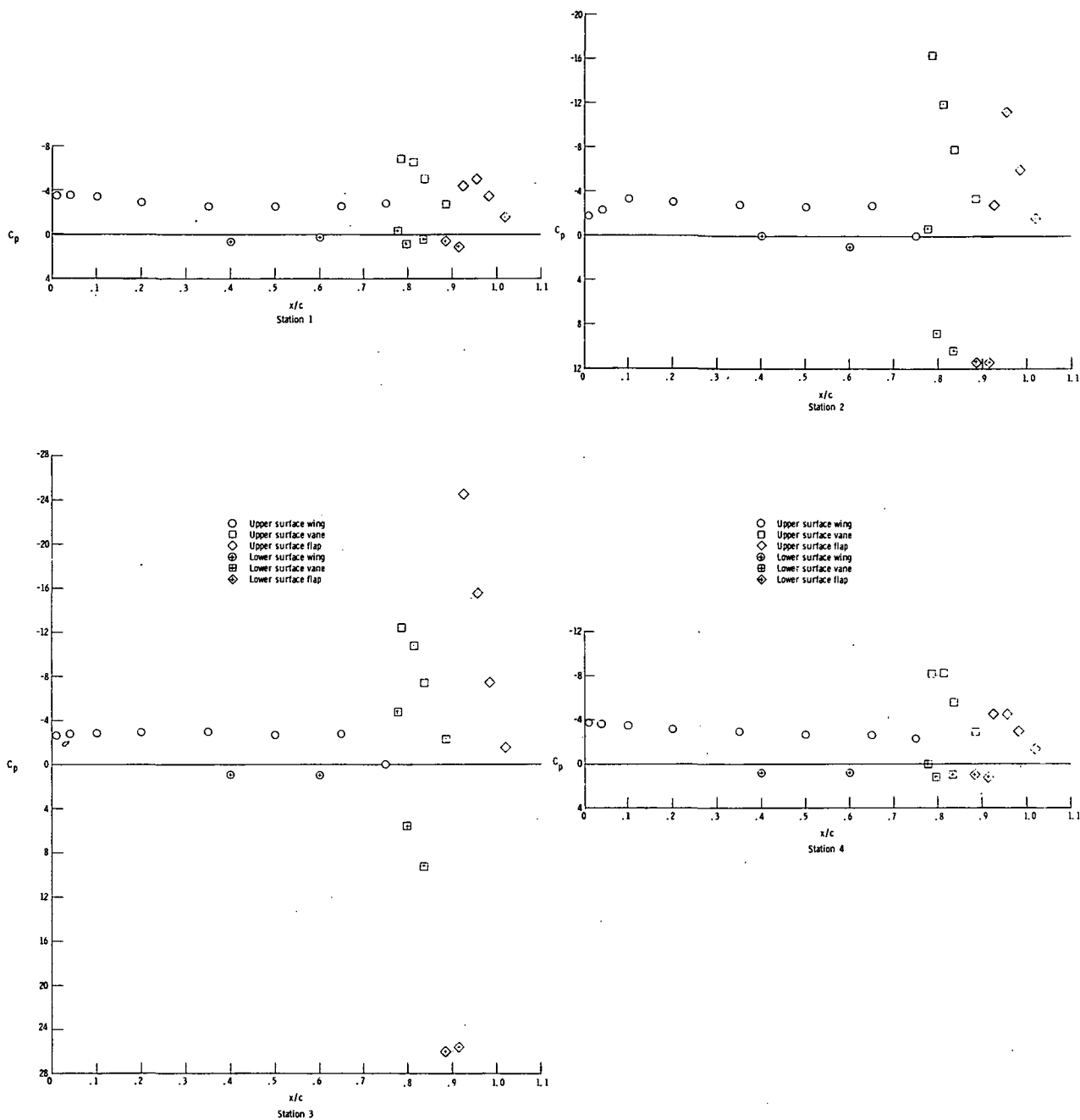


(a) Stations 1 to 4.



(b) Stations 5 to 8.

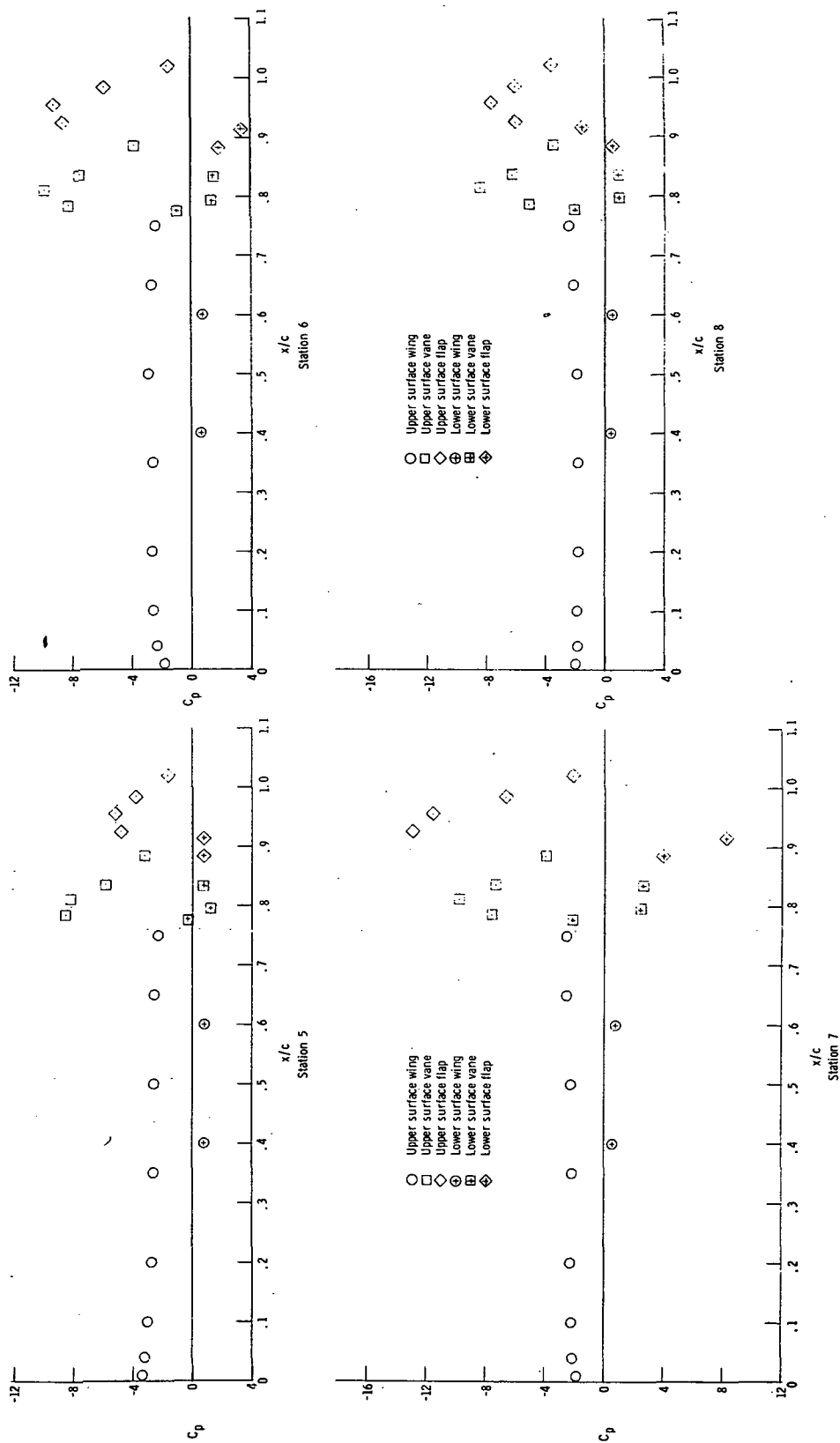
Figure 46.- Pressure distributions on wing and flap of model. Full-span flap.  $\delta f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 0$ ;  $A = 7$ .



(a) Stations 1 to 4.

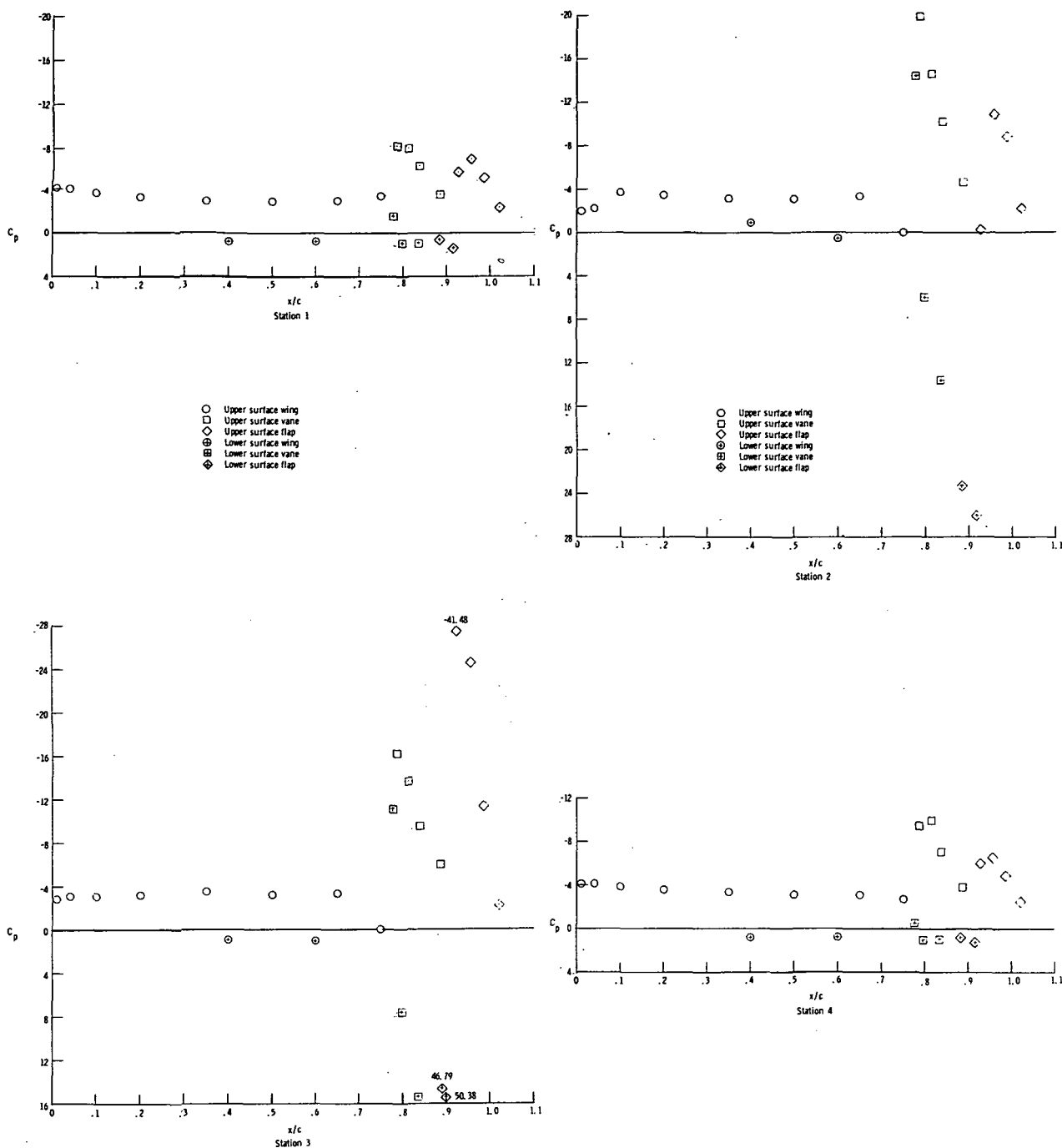
Figure 47.- Pressure distributions on wing and flap of model. All engines operating.  
 Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 2.05$ ;  $A = 7$ .





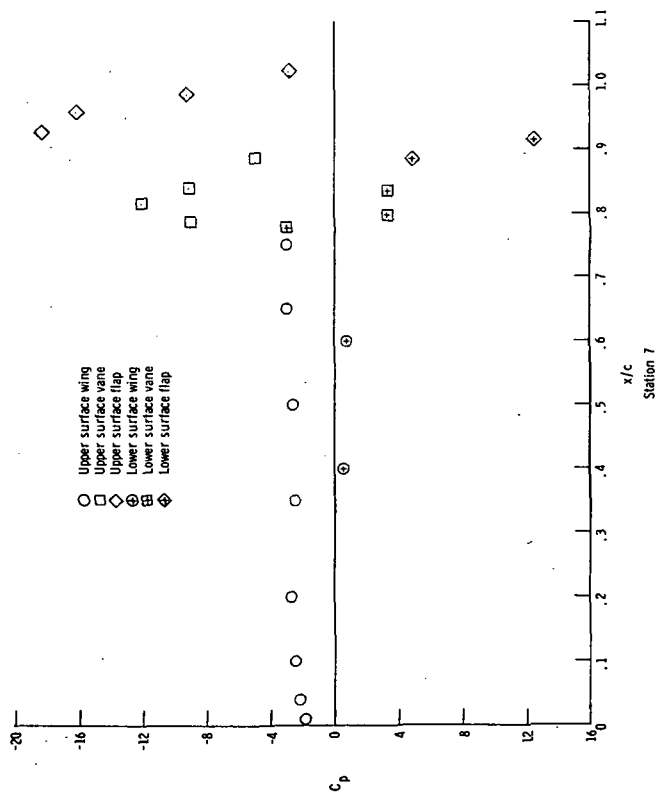
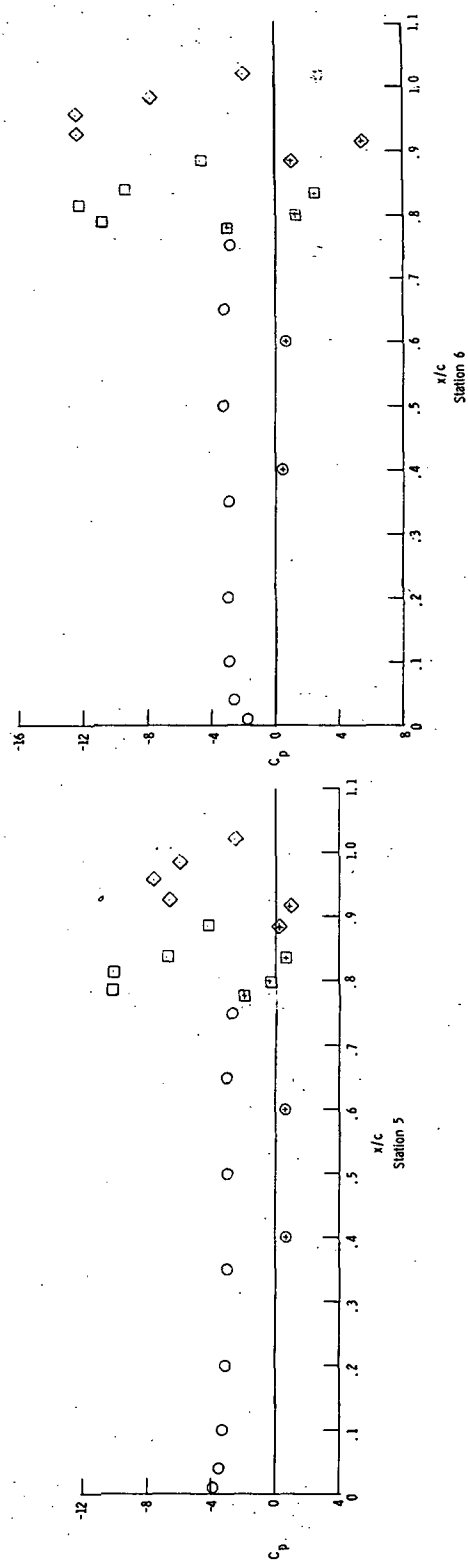
(b) Stations 5 to 8.

Figure 47. - Concluded.

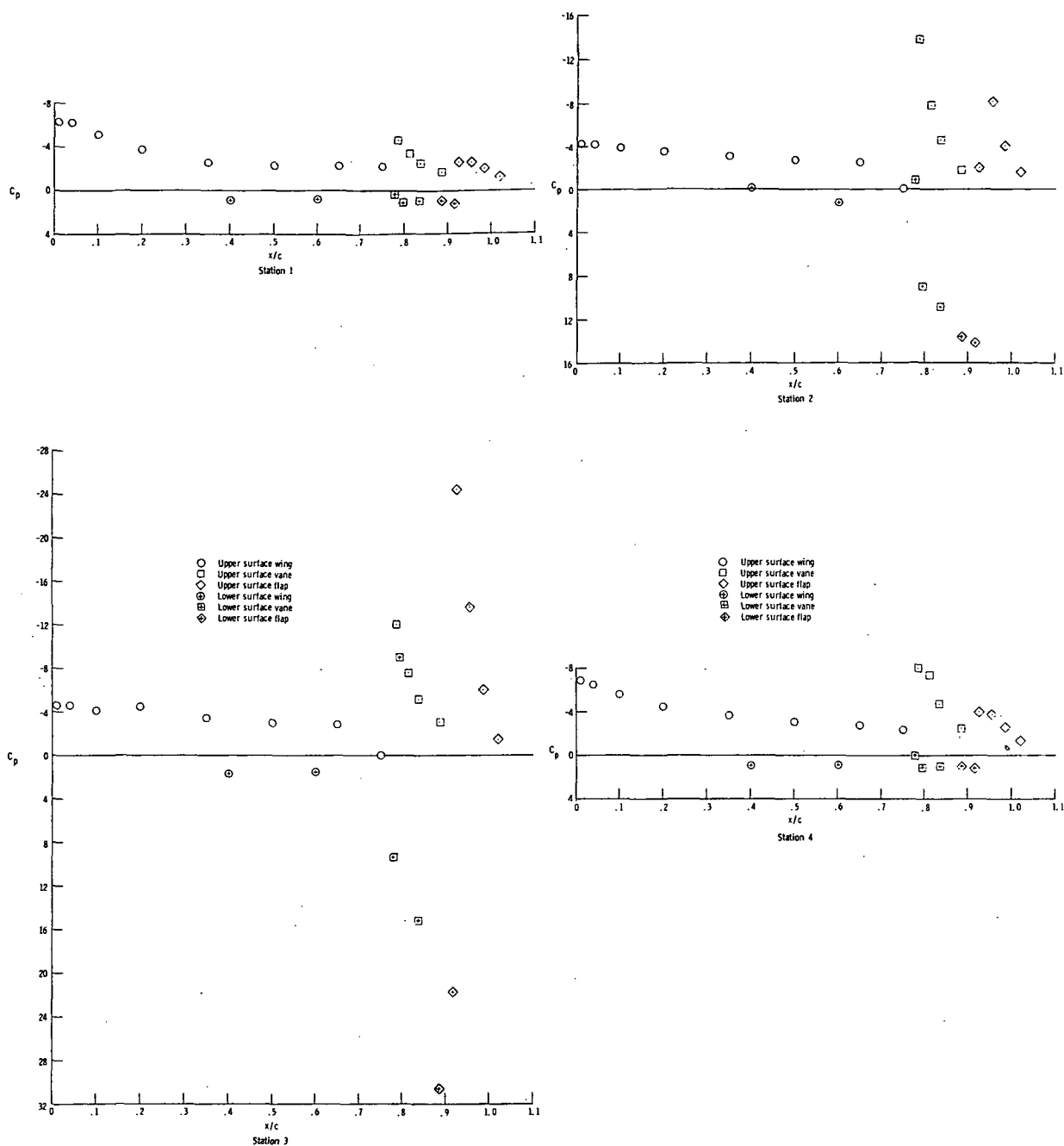


(a) Stations 1 to 4.

Figure 48.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 4.11$ ;  $A = 7$ .

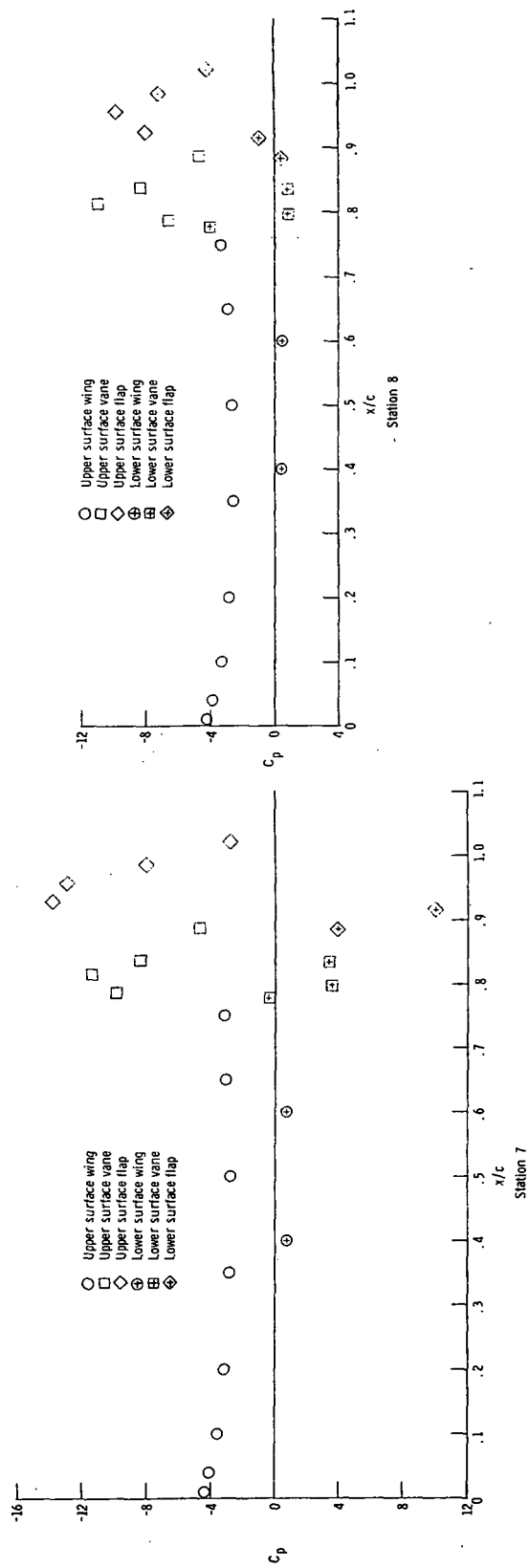
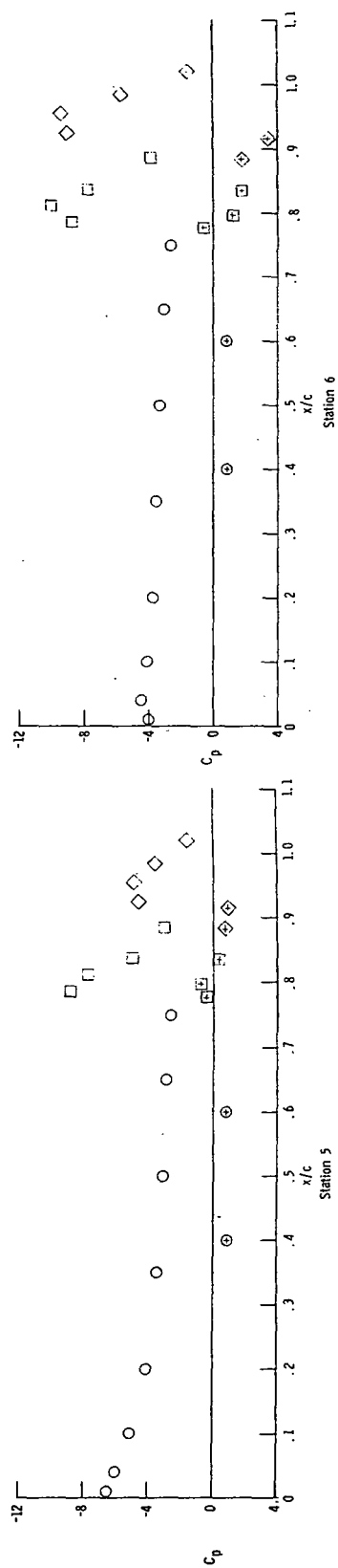


(b) Stations 5 to 8.  
Figure 48. - Concluded.



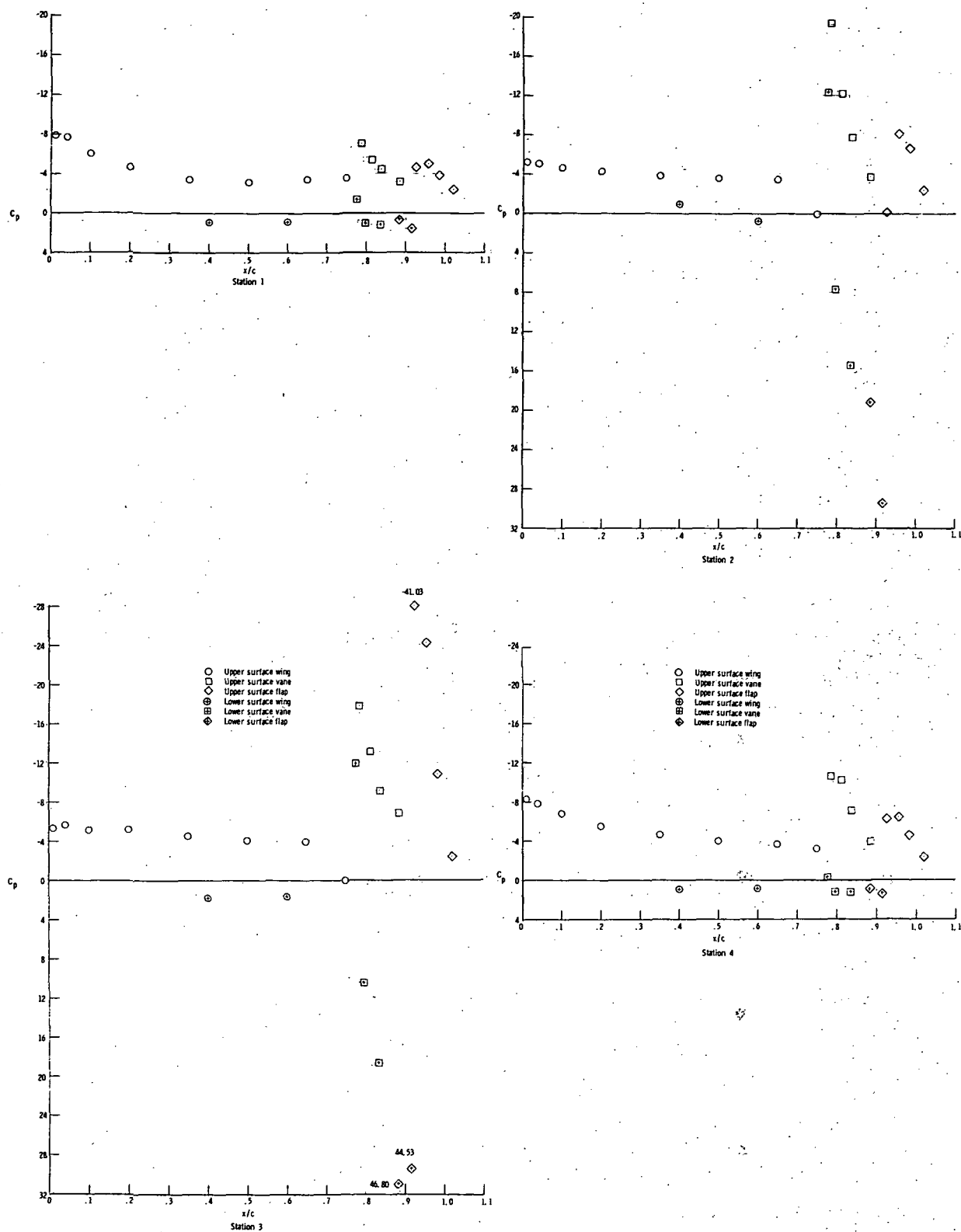
(a) Stations 1 to 4.

Figure 49.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_{\mu} = 2.05$ ;  $A = 7$ .



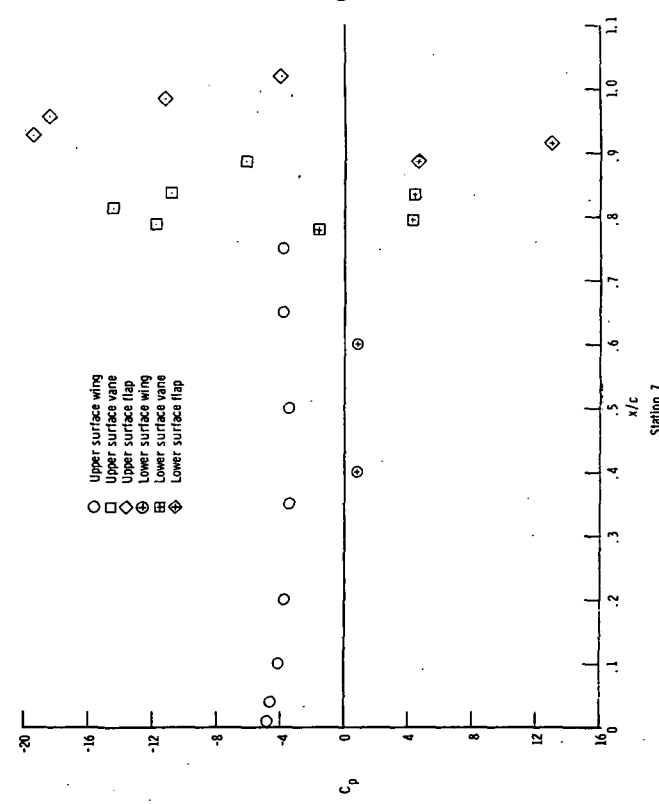
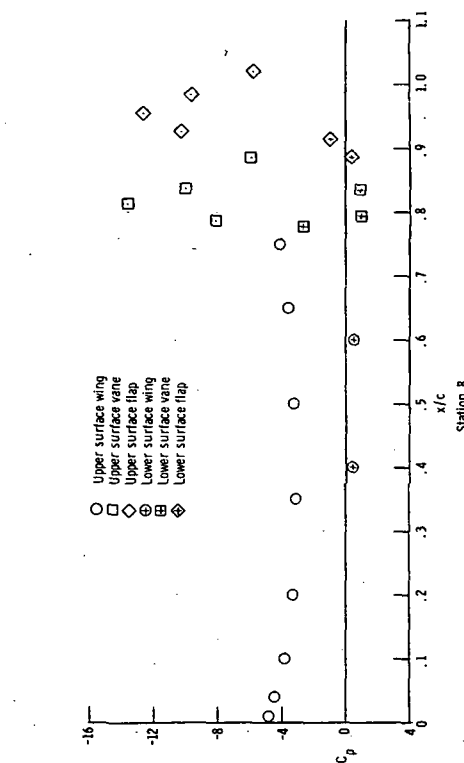
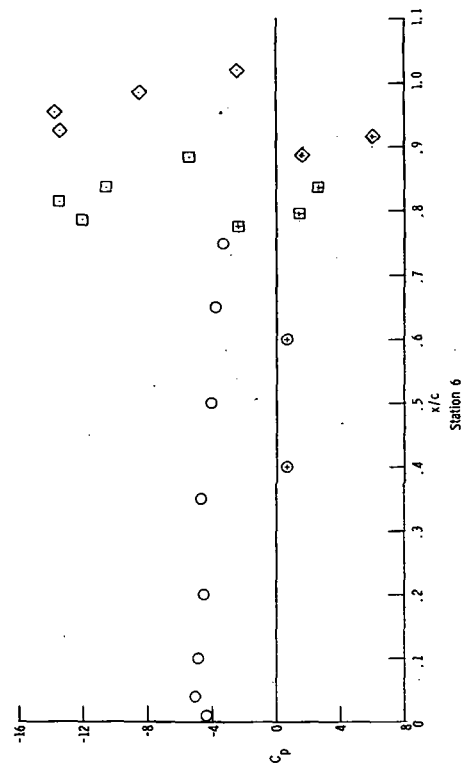
(b) Stations 5 to 8.

Figure 49.- Concluded.



(a) Stations 1 to 4.

Figure 50.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_{\mu} = 4.11$ ;  $A = 7$ .



Upper surface wing  
Upper surface vane  
Upper surface flap  
Lower surface wing  
Lower surface vane  
Lower surface flap

Upper surface wing  
Upper surface vane  
Upper surface flap  
Lower surface wing  
Lower surface vane  
Lower surface flap

(b) Stations 5 to 8.

Figure 50. - Concluded.

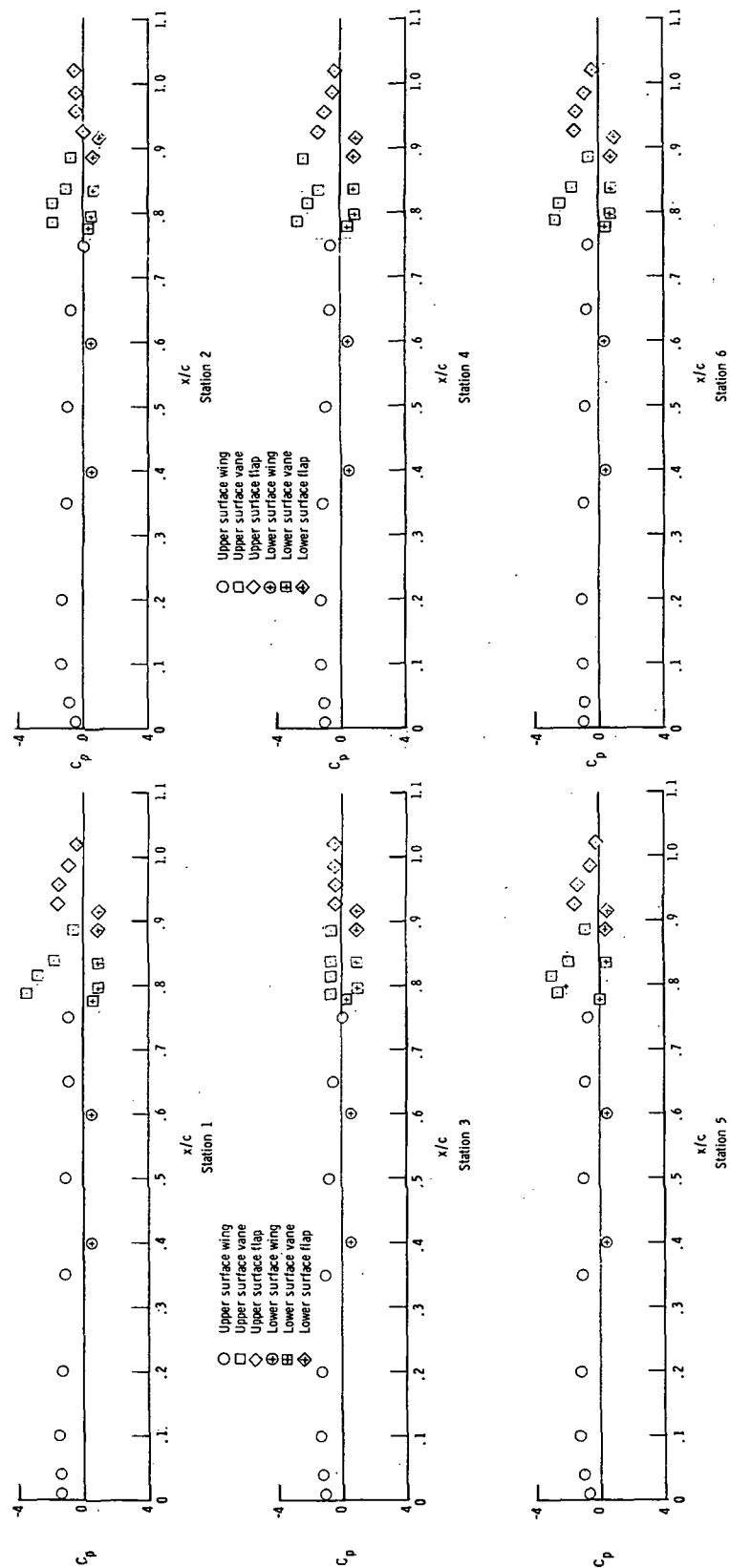


Figure 51.- Pressure distributions on wing and flap of model.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 0$ ;  $A = 7$ .



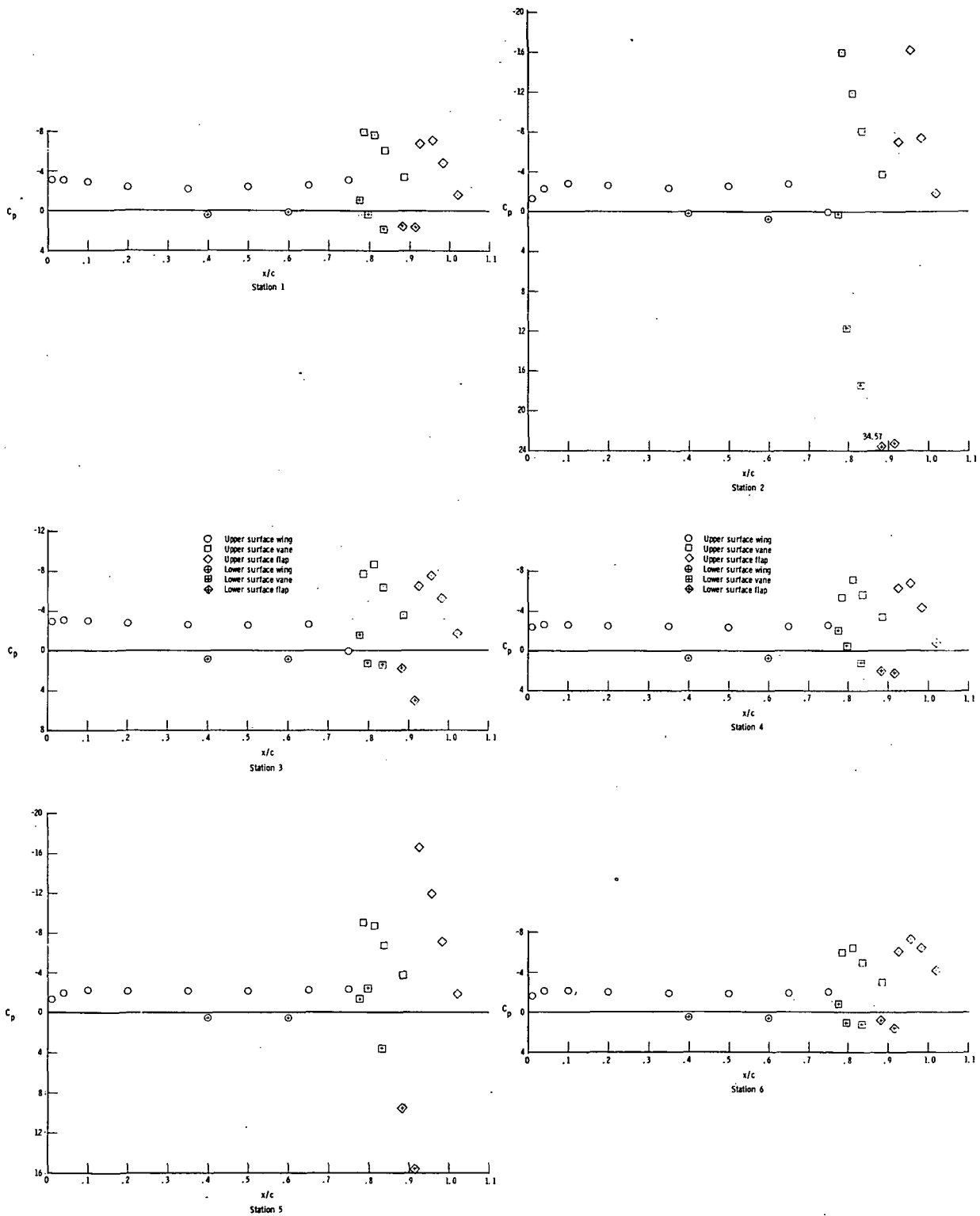


Figure 52.- Pressure distributions on wing and flap of model. All engines operating. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 2.05$ ;  $A = 7$ .

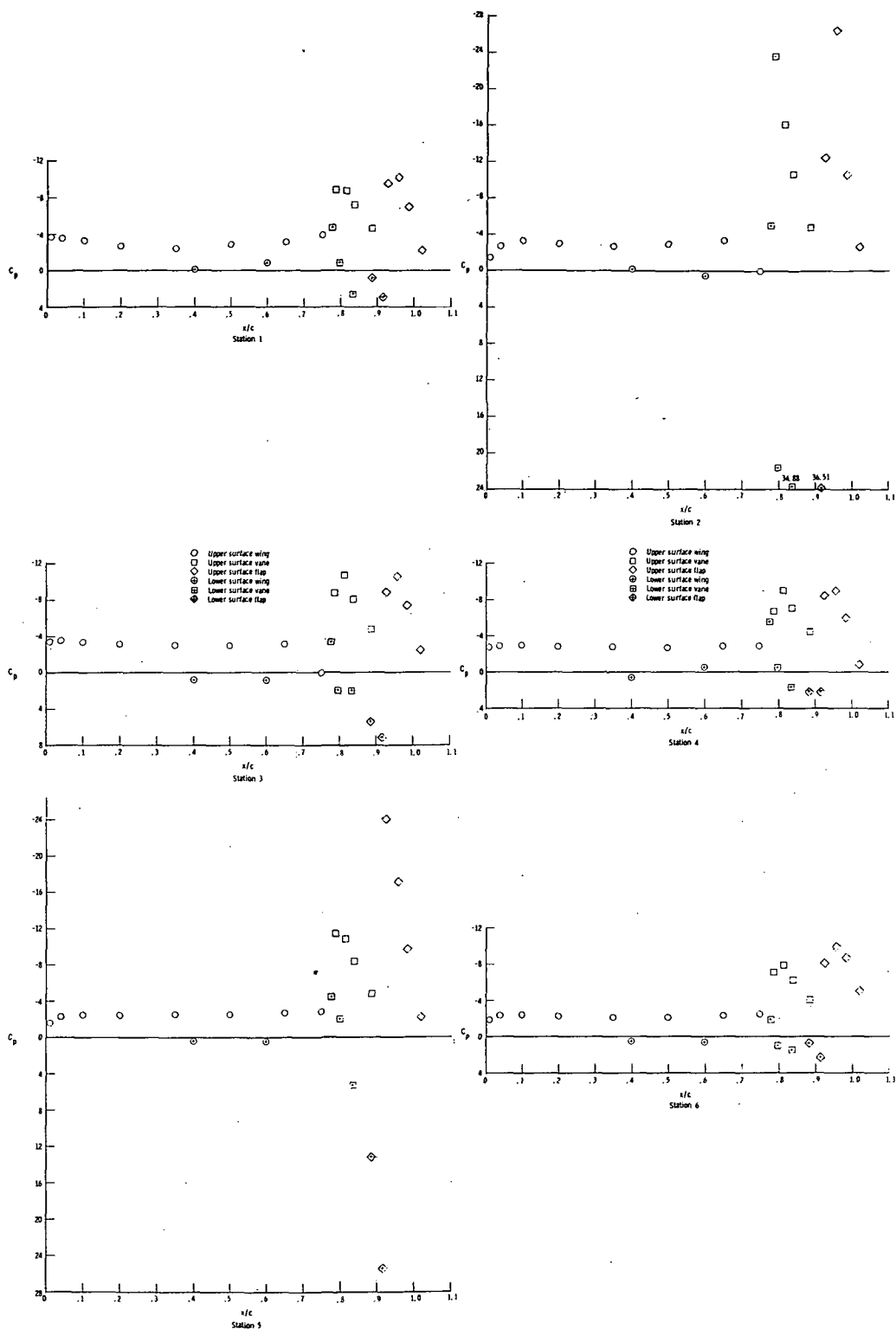


Figure 53.- Pressure distributions on wing and flap of model. All engines operating. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 4.11$ ;  $A = 7$ .

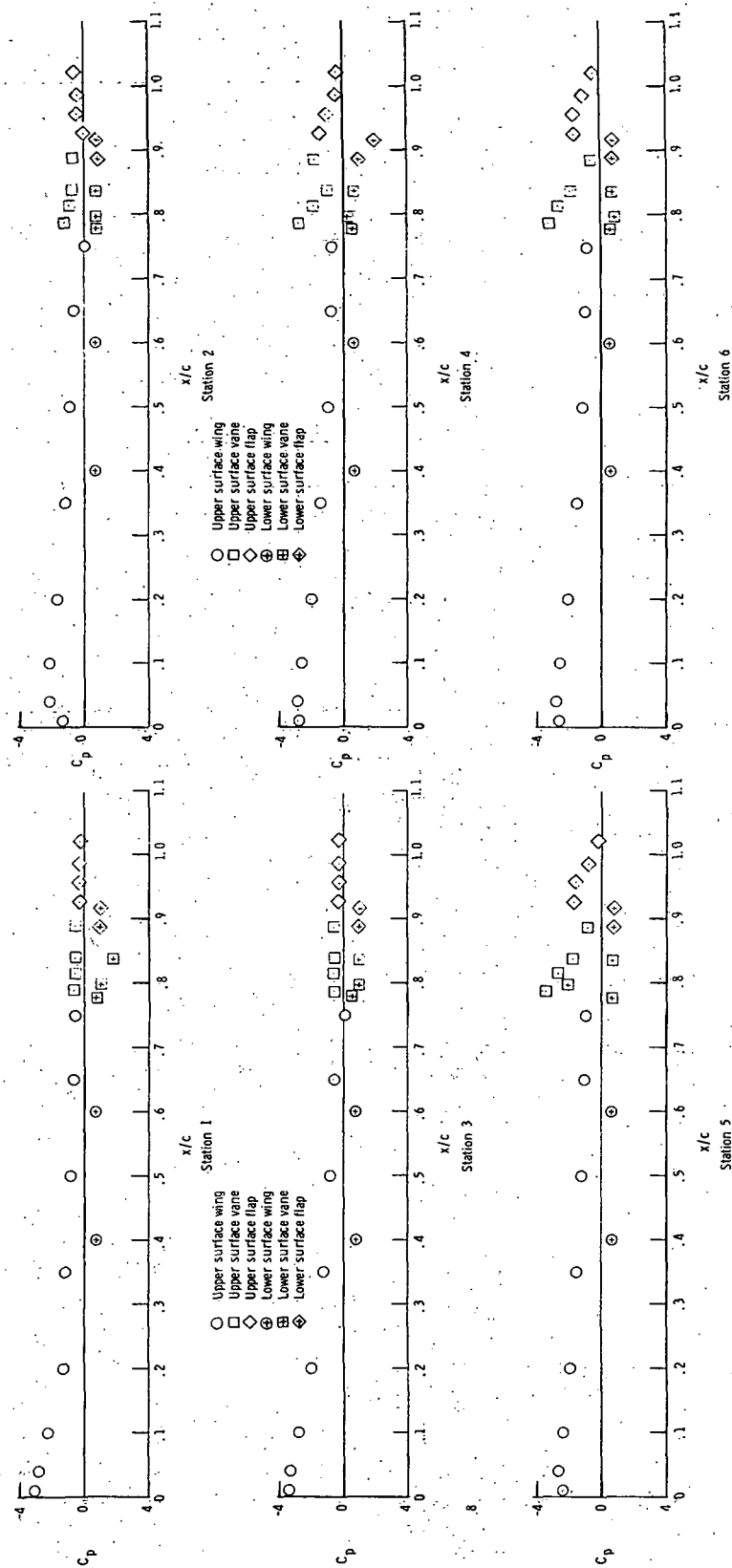


Figure 54. - Pressure distributions on wing and flap of model.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_{\mu} = 0$ ;  $A = 7$ .

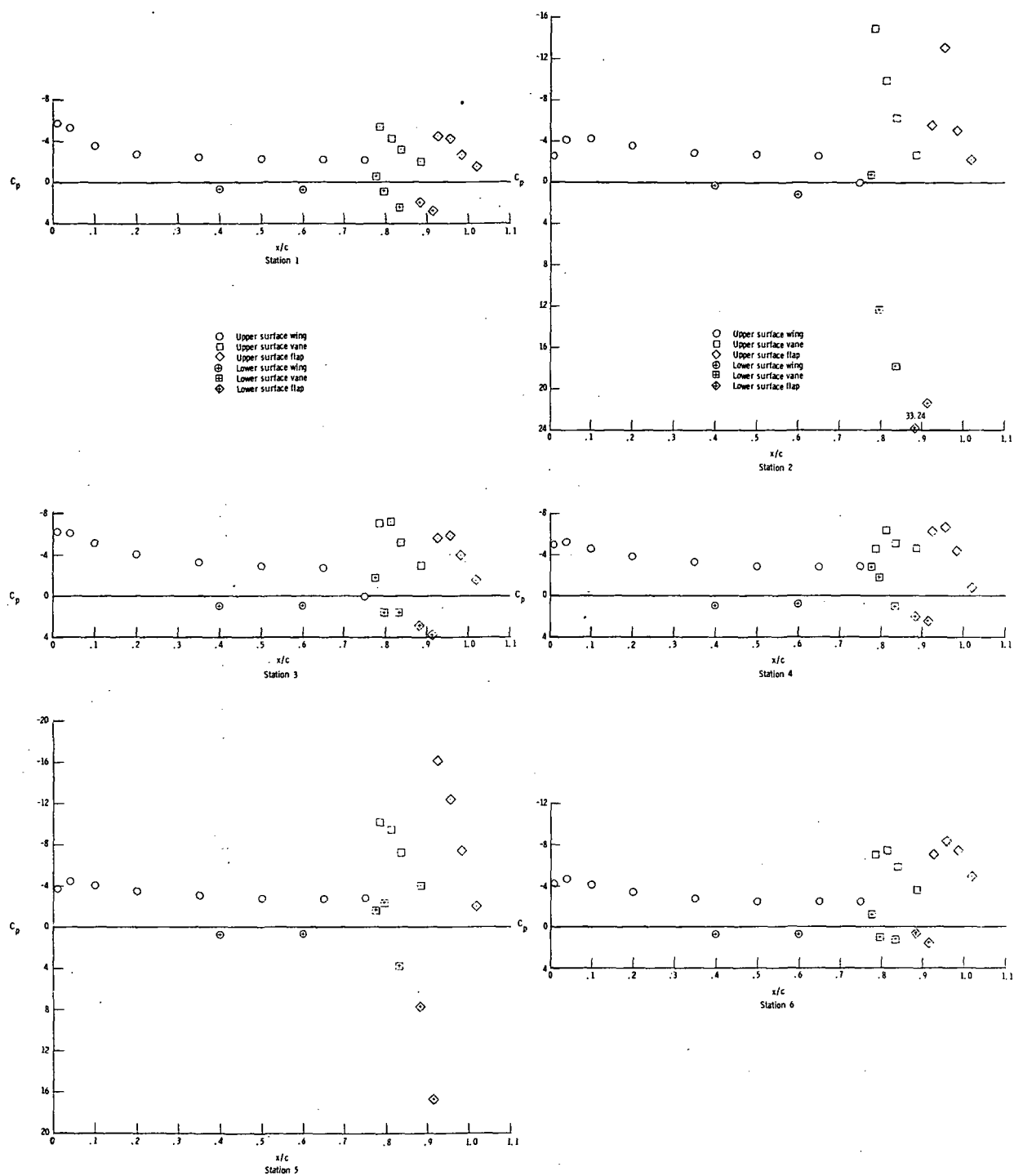


Figure 55.- Pressure distributions on wing and flap of model. All engines operating.  
Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 2.05$ ;  $A = 7$ .

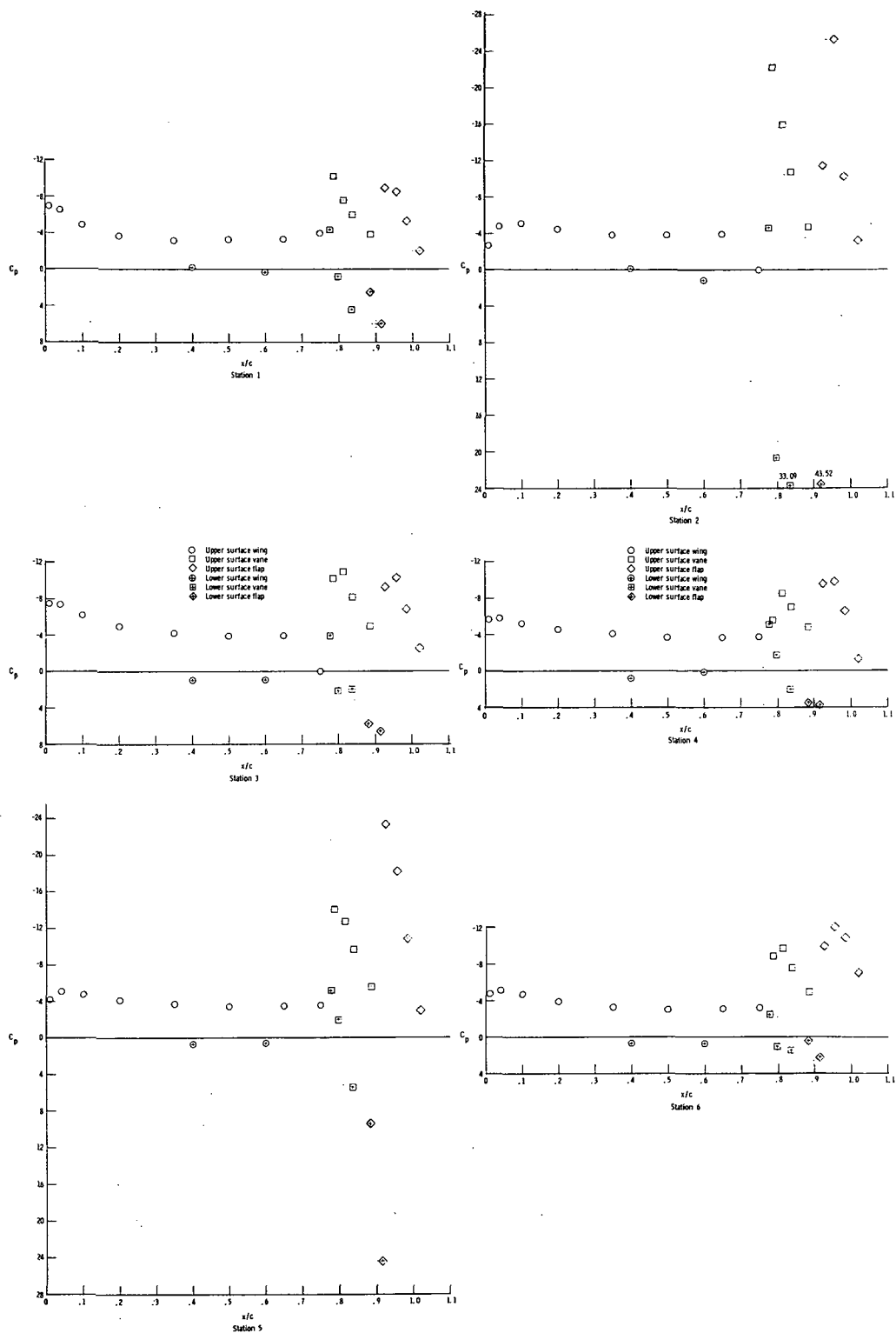


Figure 56.- Pressure distributions on wing and flap of model. All engines operating.  
Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 4.11$ ;  $A = 7$ .

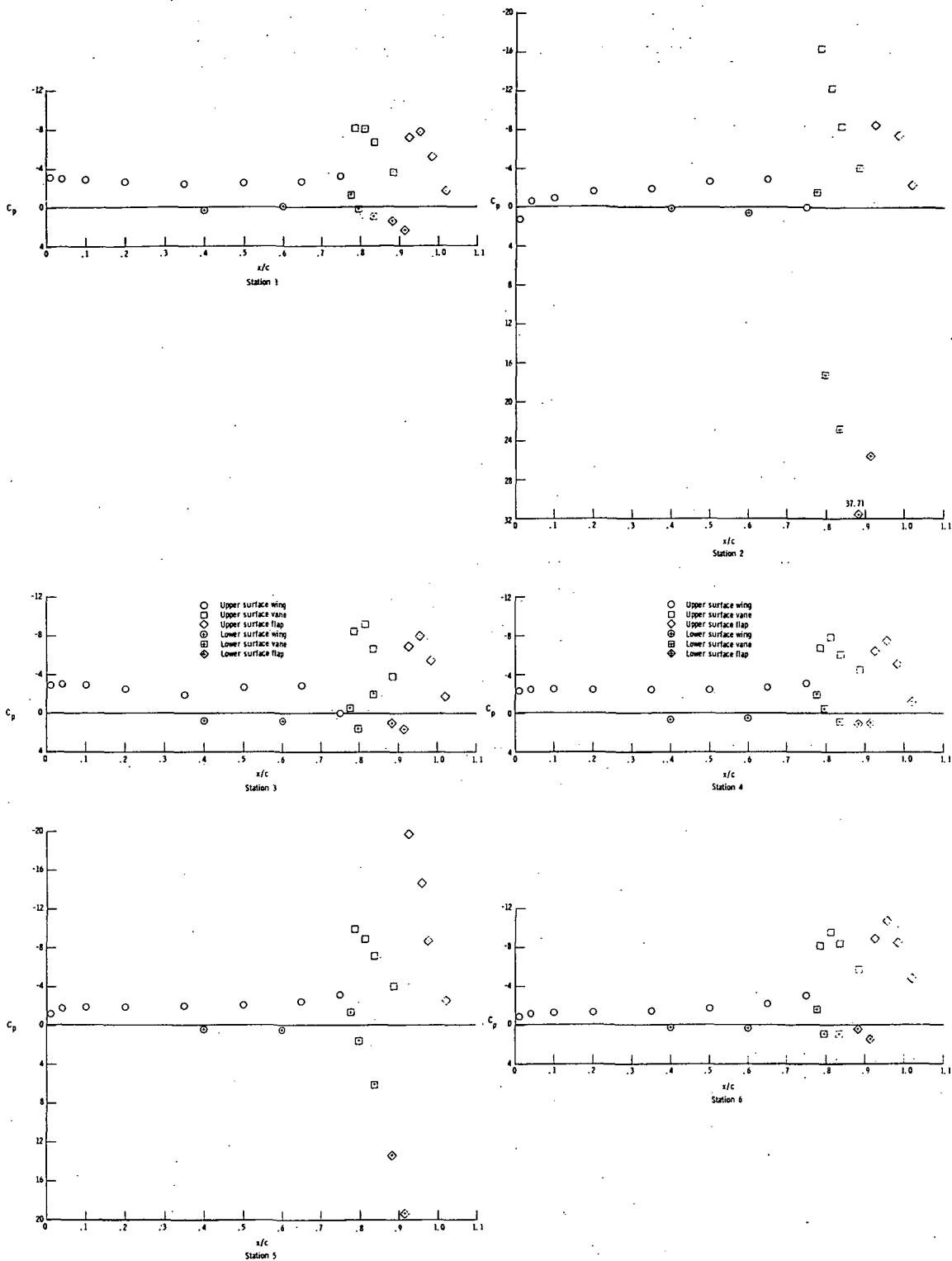


Figure 57.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 2.75$ ;  $A = 5.25$ .

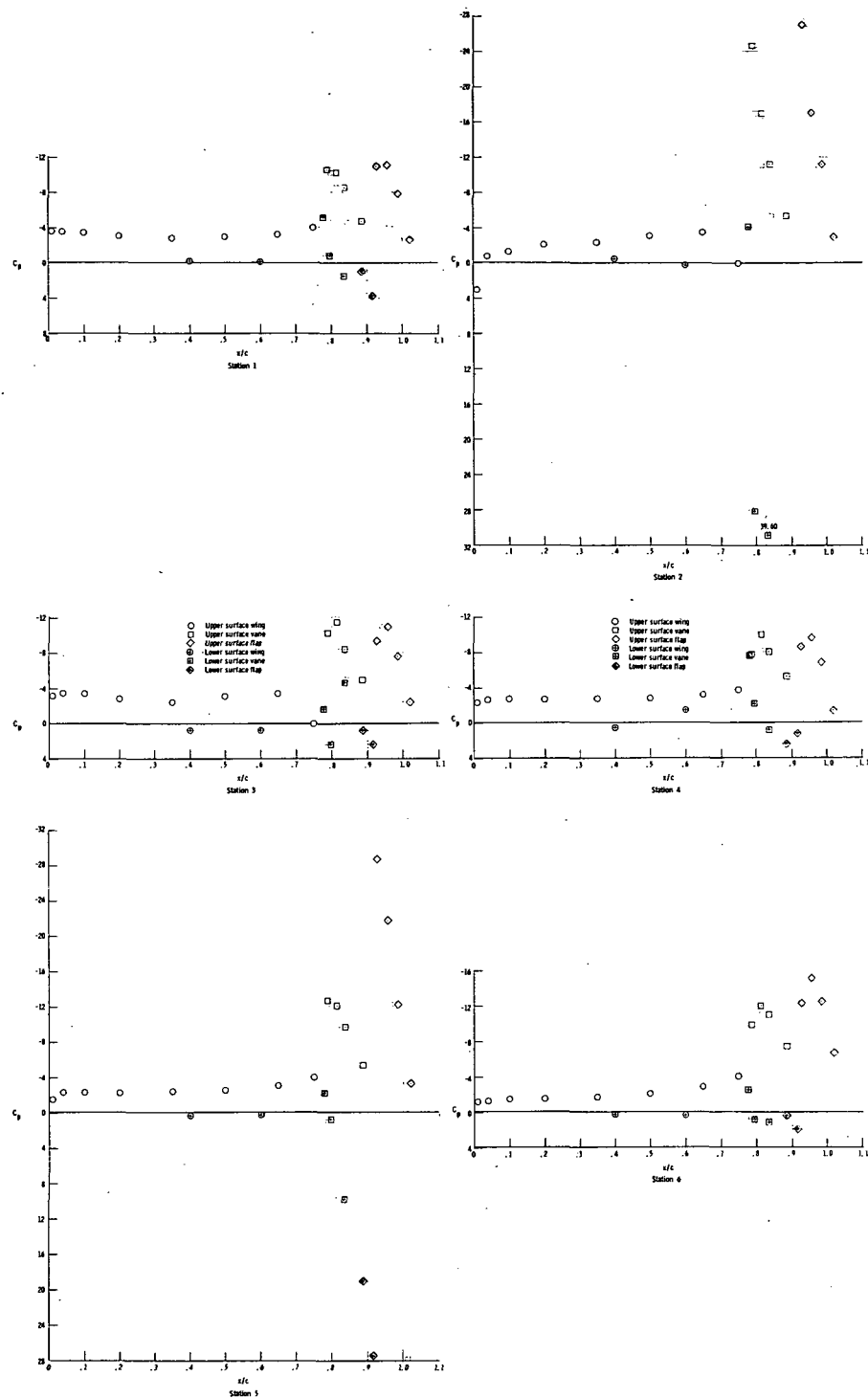


Figure 58.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 5.49$ ;  $A = 5.25$ .

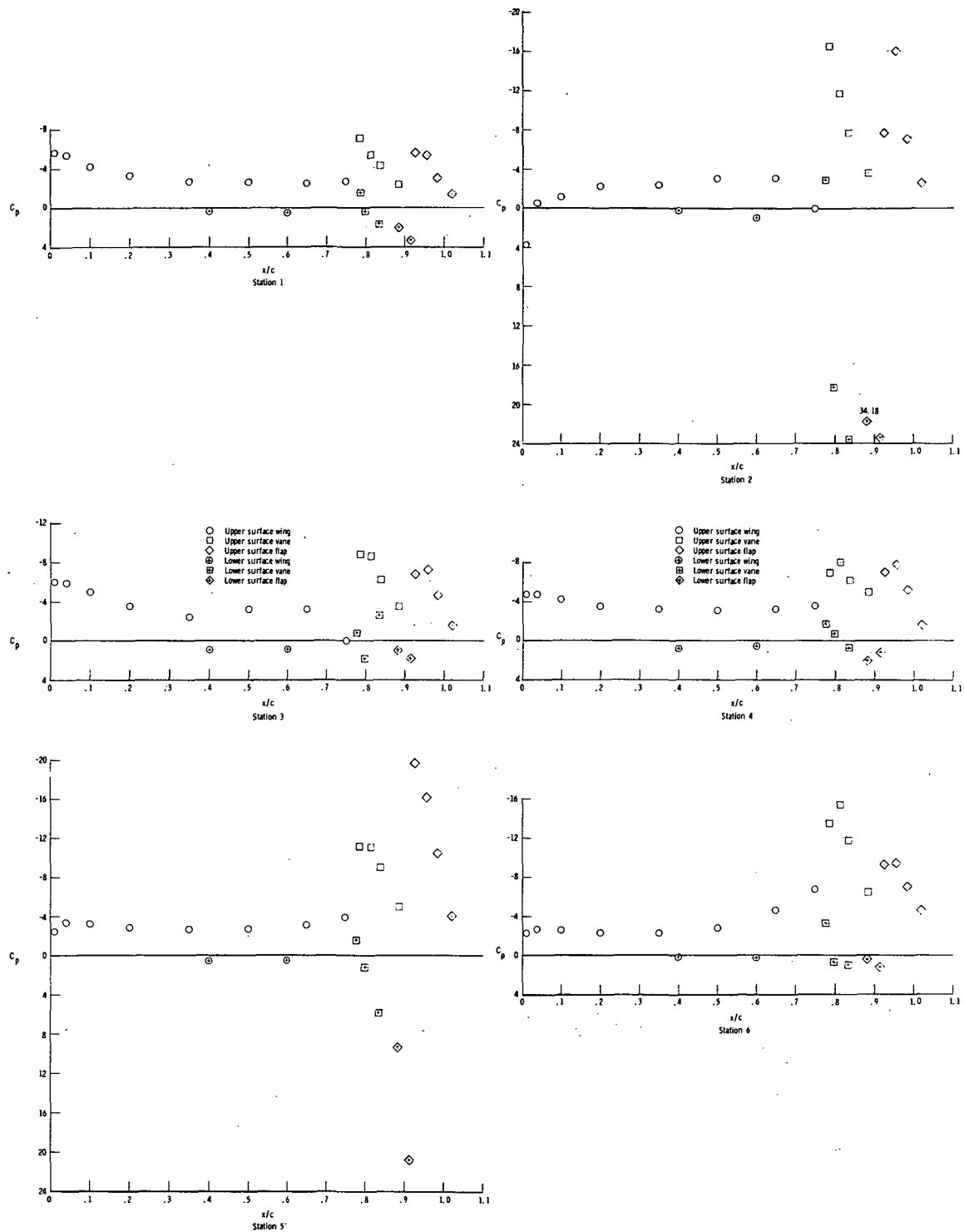


Figure 59.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 2.75$ ;  $A = 5.25$ .



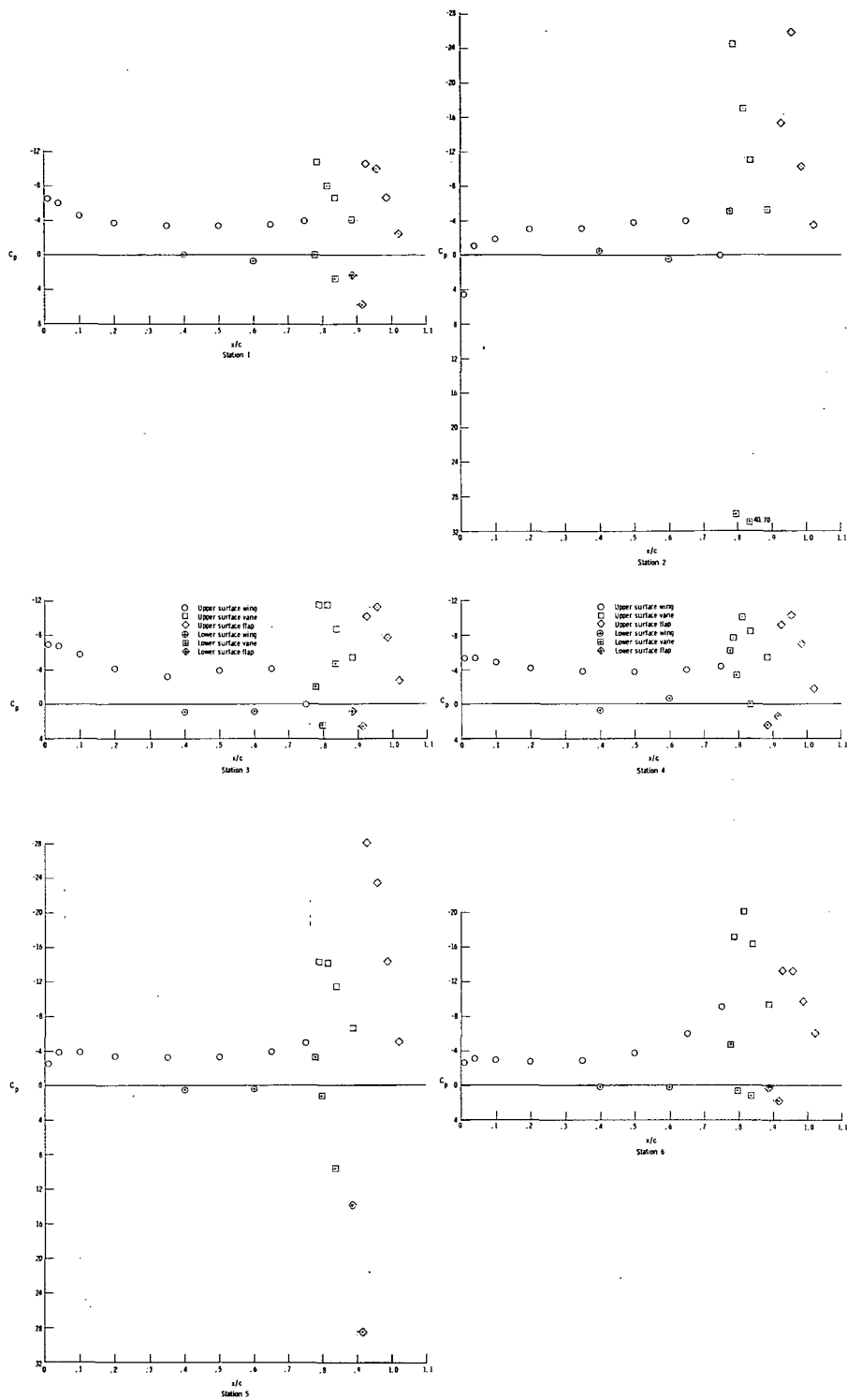


Figure 60.- Pressure distributions on wing and flap of model. All engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 5.49$ ;  $A = 5.25$ .

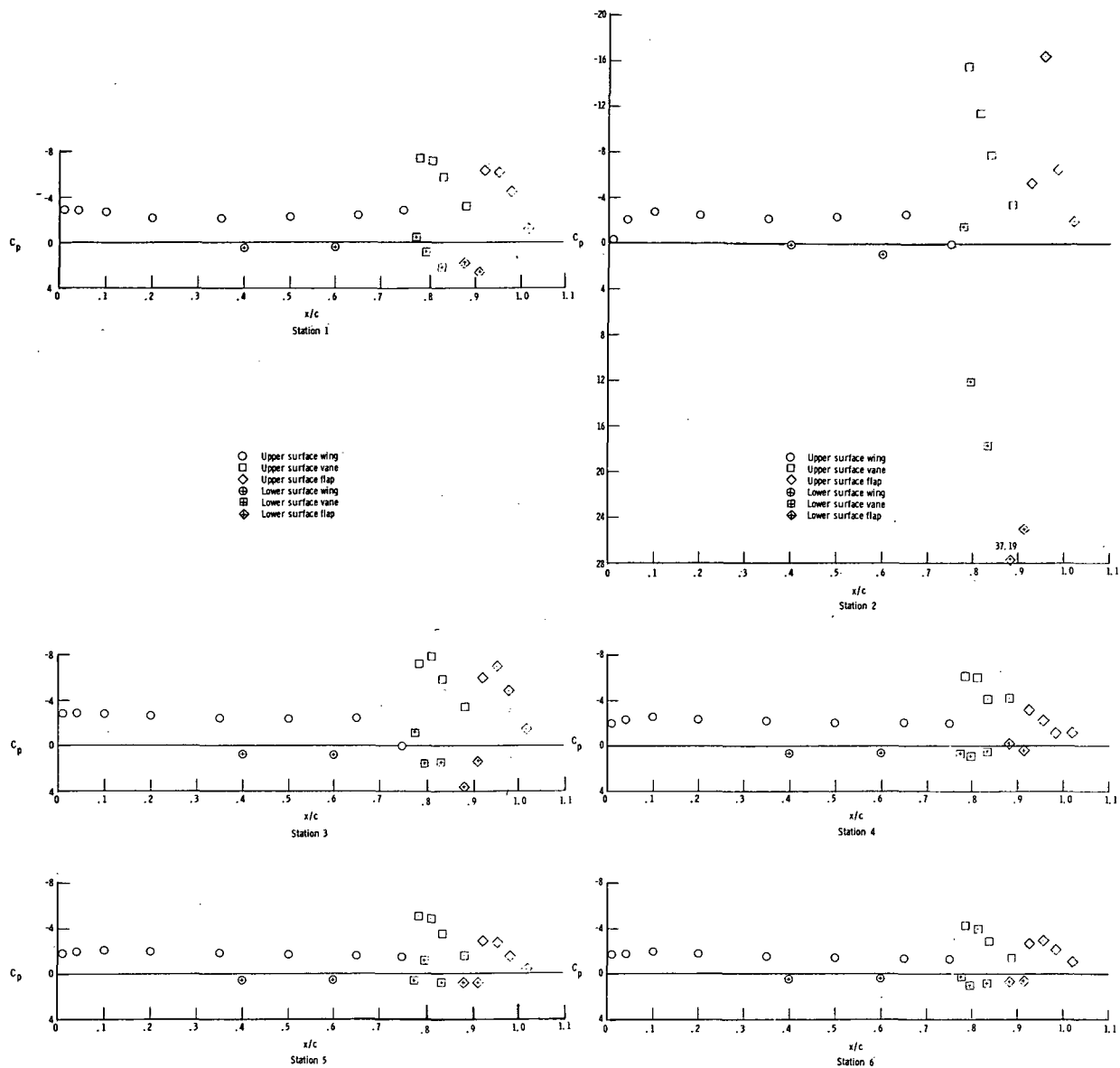


Figure 61.- Pressure distributions on wing and flap of model. Outboard engine inoperative. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 1.54$ ;  $A = 7$ .

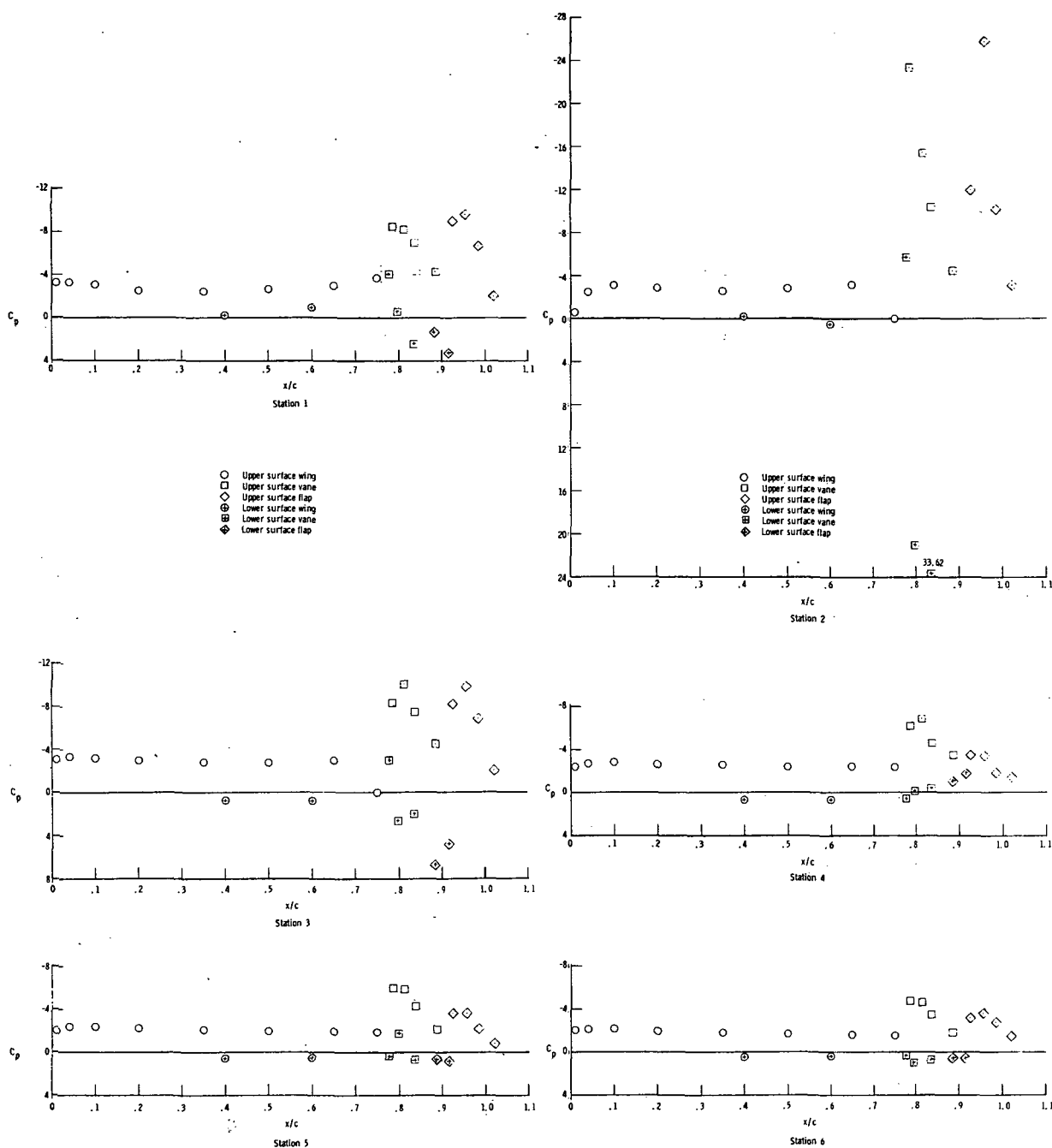


Figure 62.- Pressure distributions on wing and flap of model. Outboard engine inoperative. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 3.08$ ;  $A = 7$ .

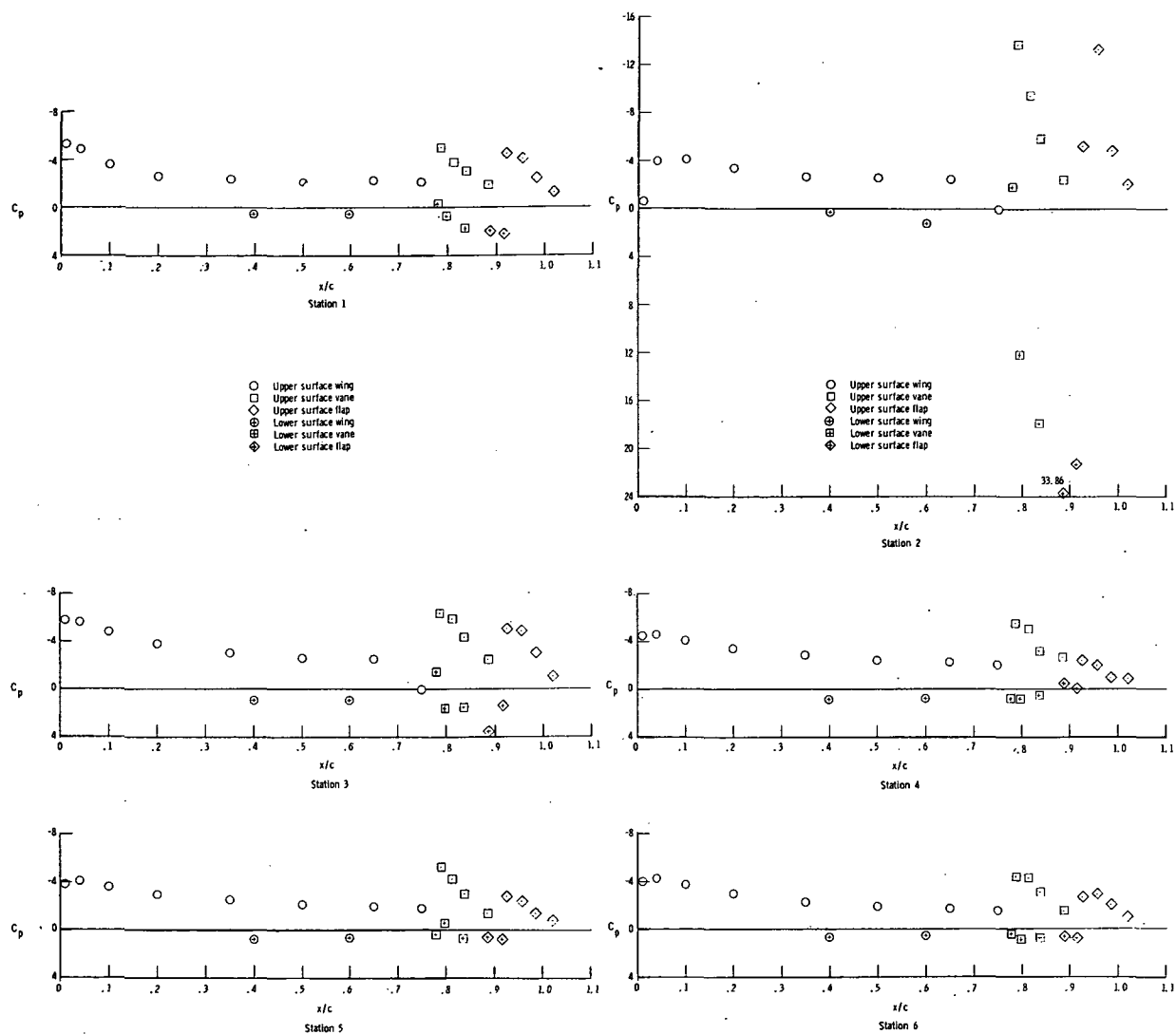


Figure 63.- Pressure distributions on wing and flap of model. Outboard engine inoperative. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_{\mu} = 1.54$ ;  $A = 7$ .

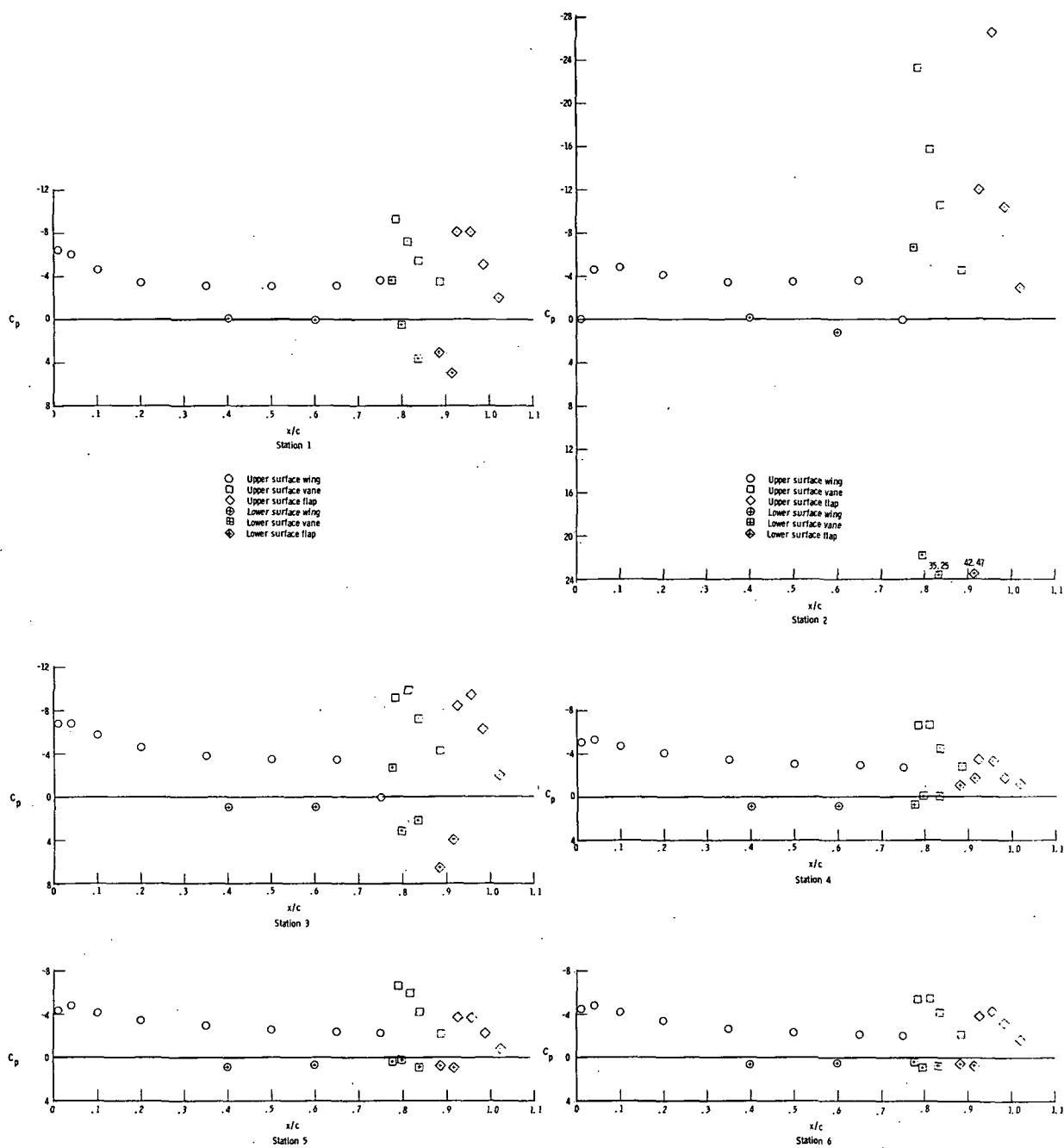


Figure 64.- Pressure distributions on wing and flap of model. Outboard engine inoperative. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_{\mu} = 3.08$ ;  $A = 7$ .

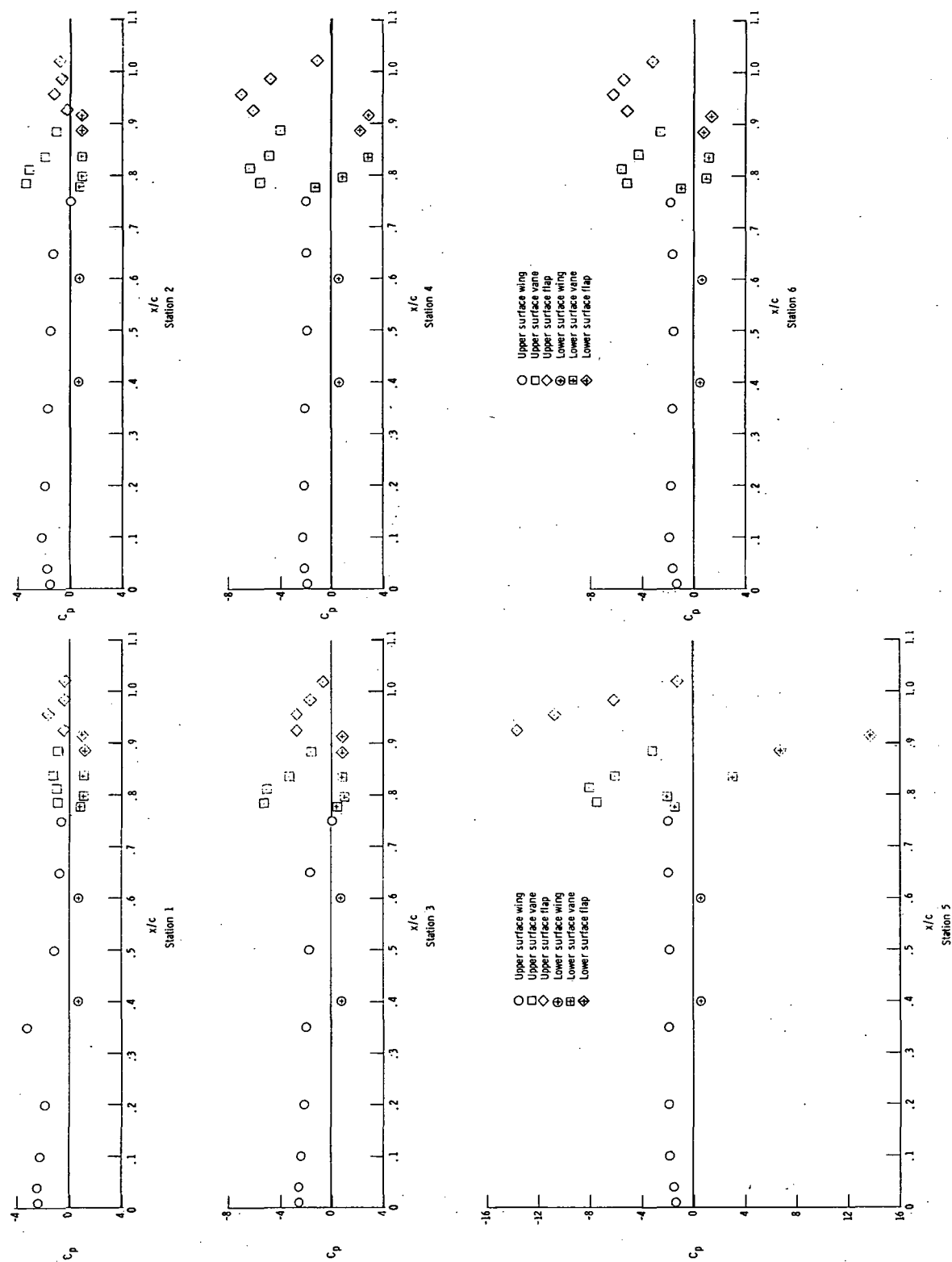


Figure 65. - Pressure distributions on wing and flap of model. Inboard engine inoperative. Partial-span flap.  
 $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 1.54$ ;  $A = 7$ .

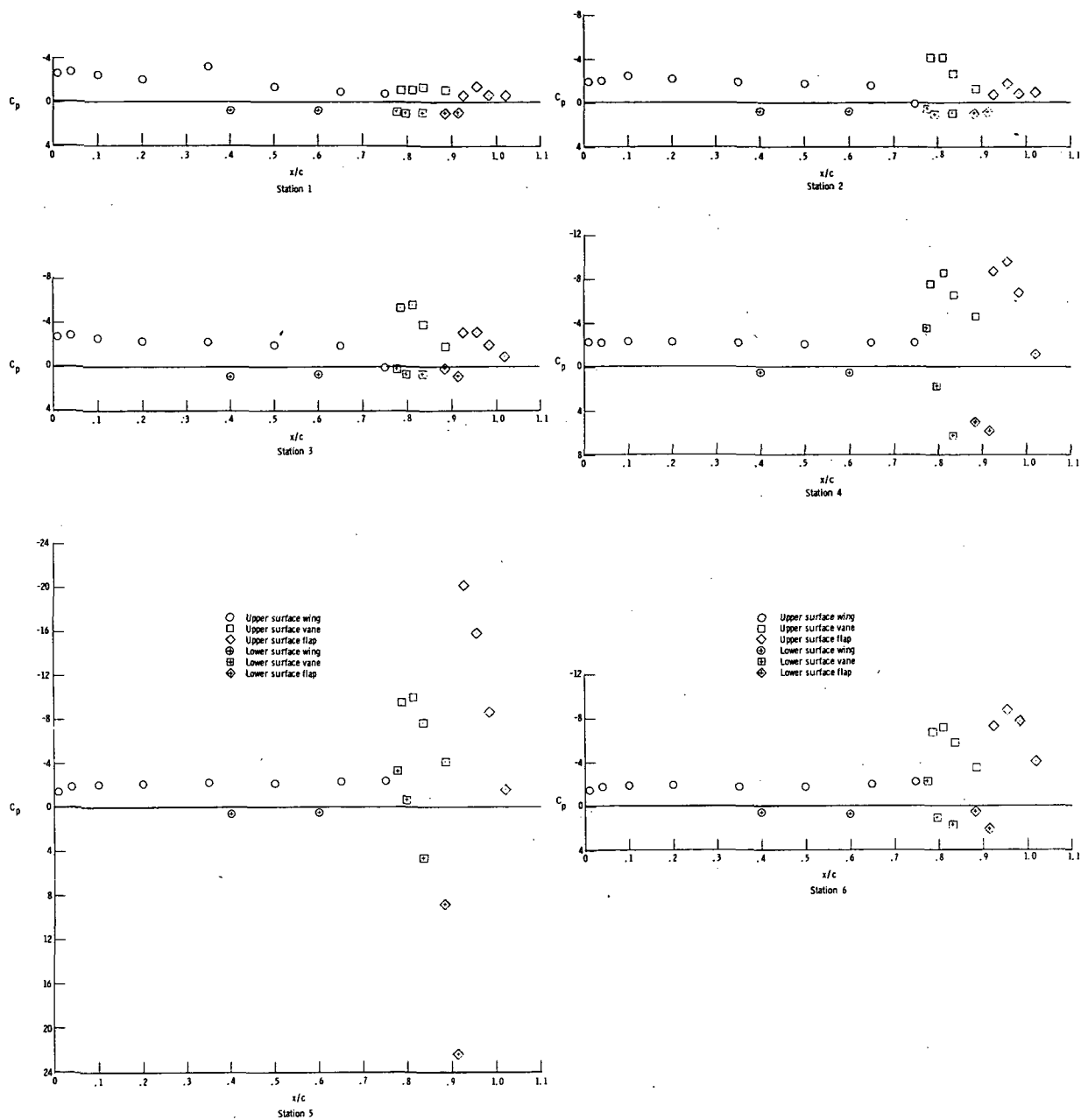


Figure 66.- Pressure distributions on wing and flap of model. Inboard engine inoperative.  
 Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 3.08$ ;  $A = 7$ .

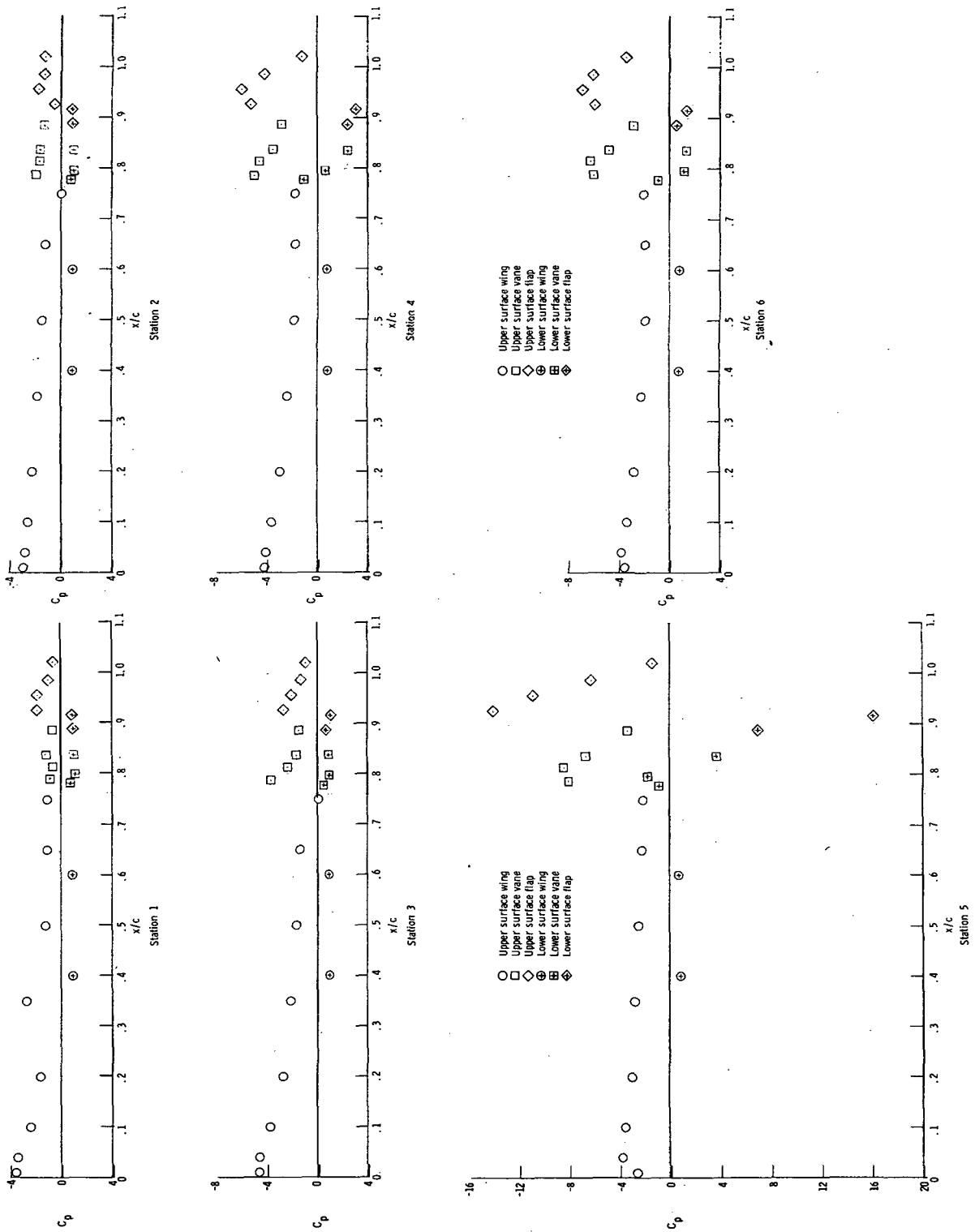


Figure 67.- Pressure distributions on wing and flap of model. Inboard engine inoperative. Partial-span flap.  
 $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 1.54$ ;  $A = 7$ .



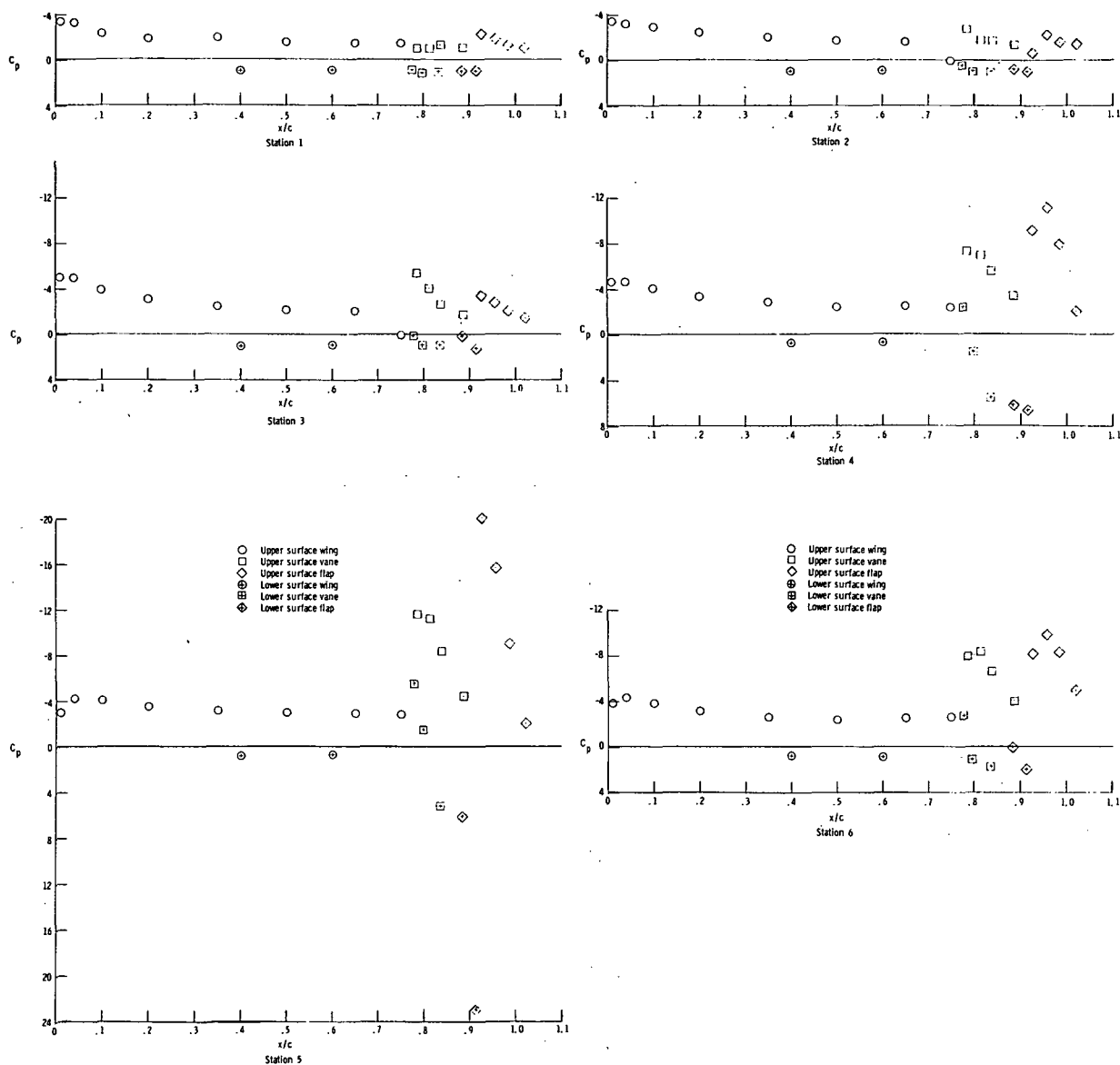


Figure 68. - Pressure distributions on wing and flap of model. Inboard engine inoperative. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 3.08$ ;  $A = 7$ .

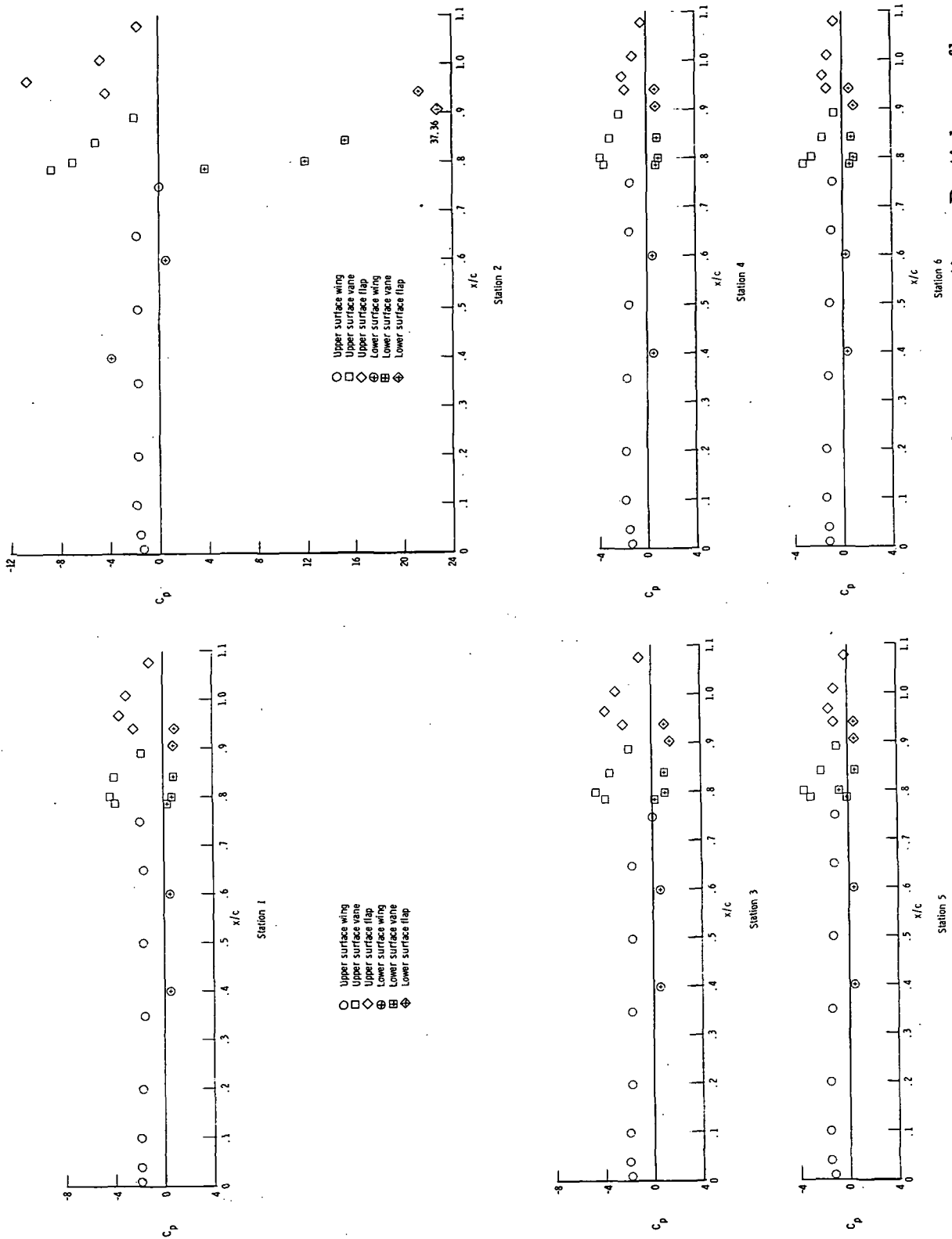


Figure 69.- Pressure distributions on wing and flap of model. Inboard engines operating. Partial-span flap.  
 $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 1.03$ ;  $A = 7$ .

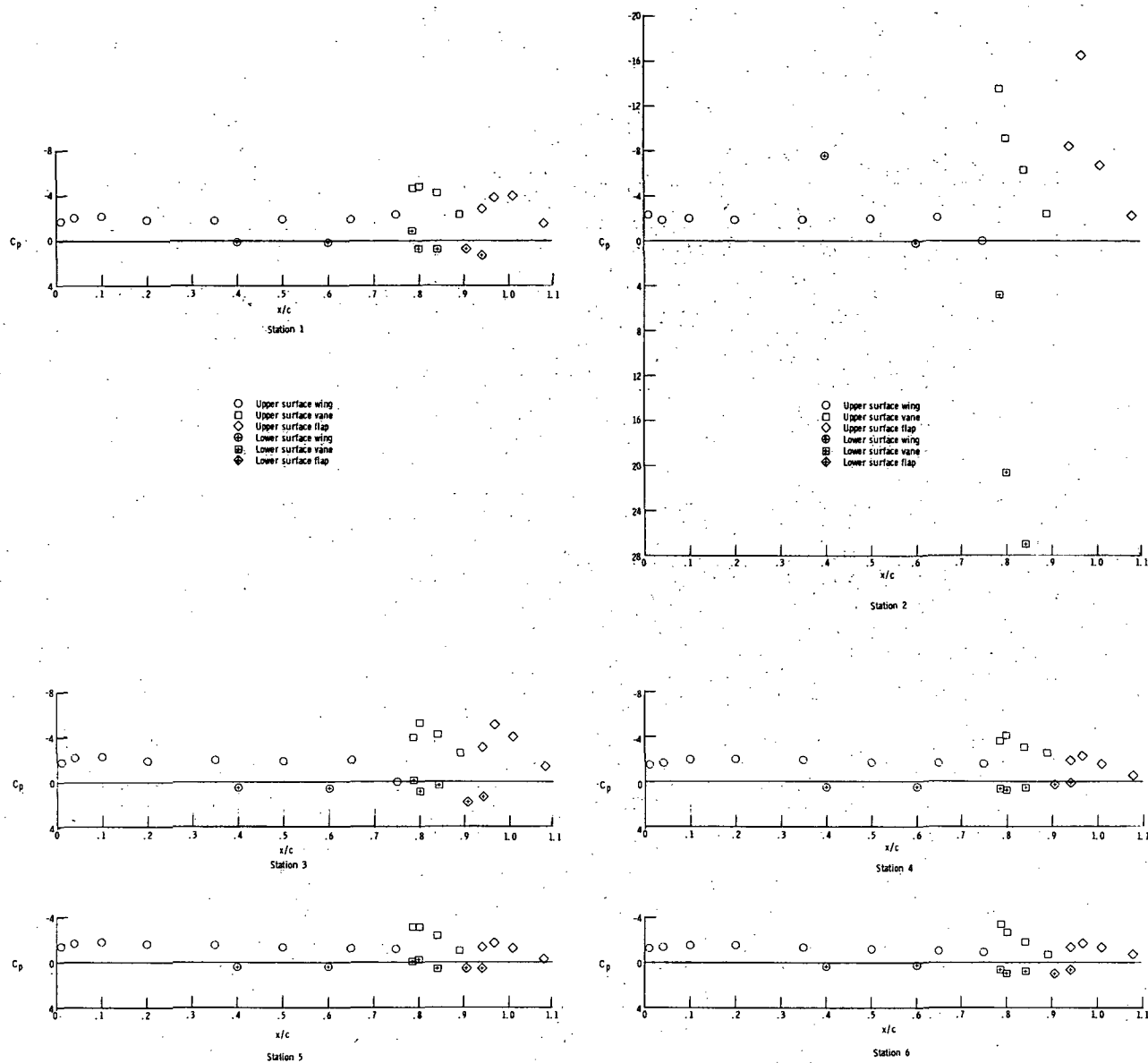


Figure 70. - Pressure distributions on wing and flap of model. Inboard engines operating. Partial-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 2.05$ ;  $A = 7$ .

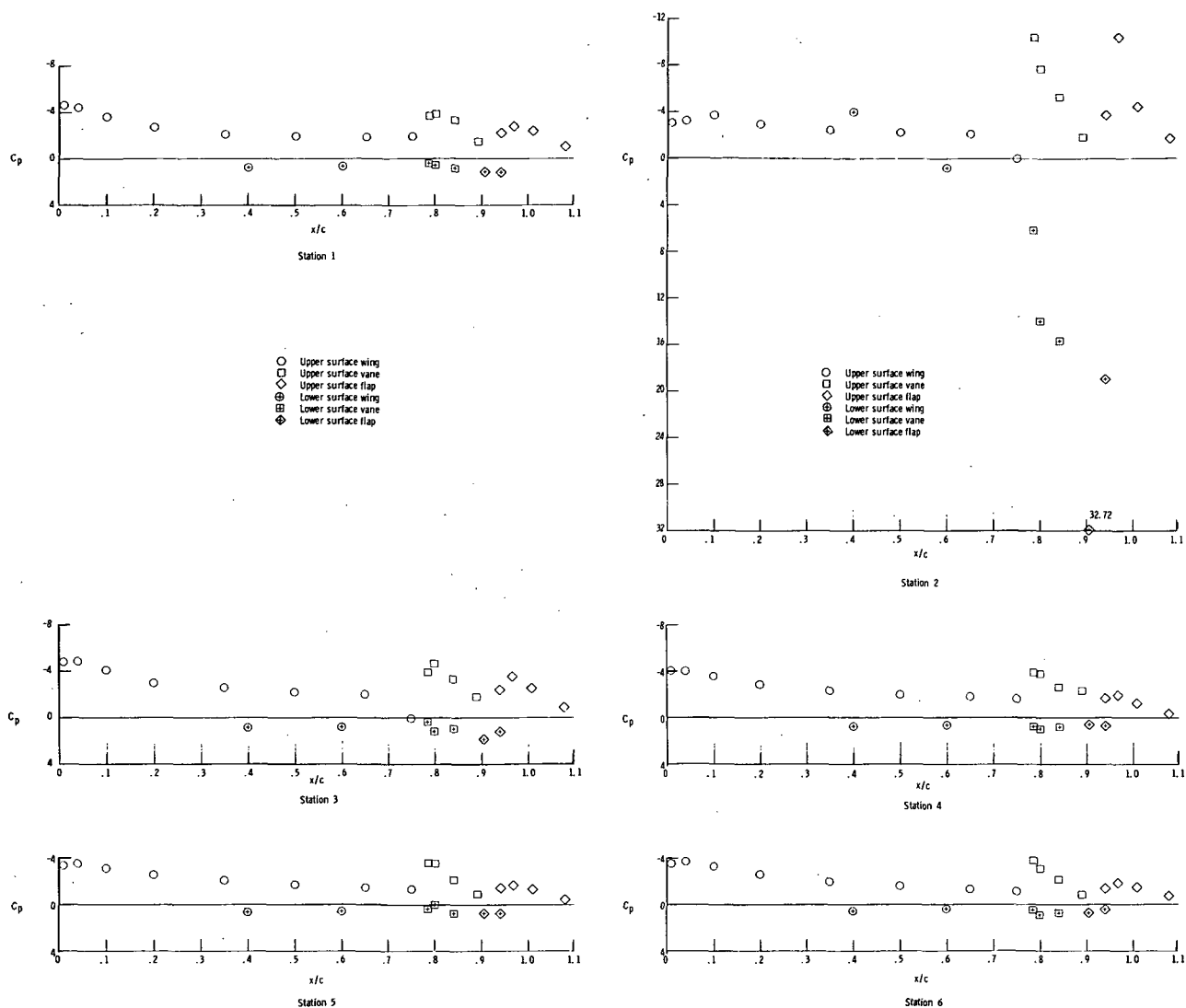


Figure 71.- Pressure distributions on wing and flap of model. Inboard engines operating.  
 Partial-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 1.03$ ;  $A = 7$ .

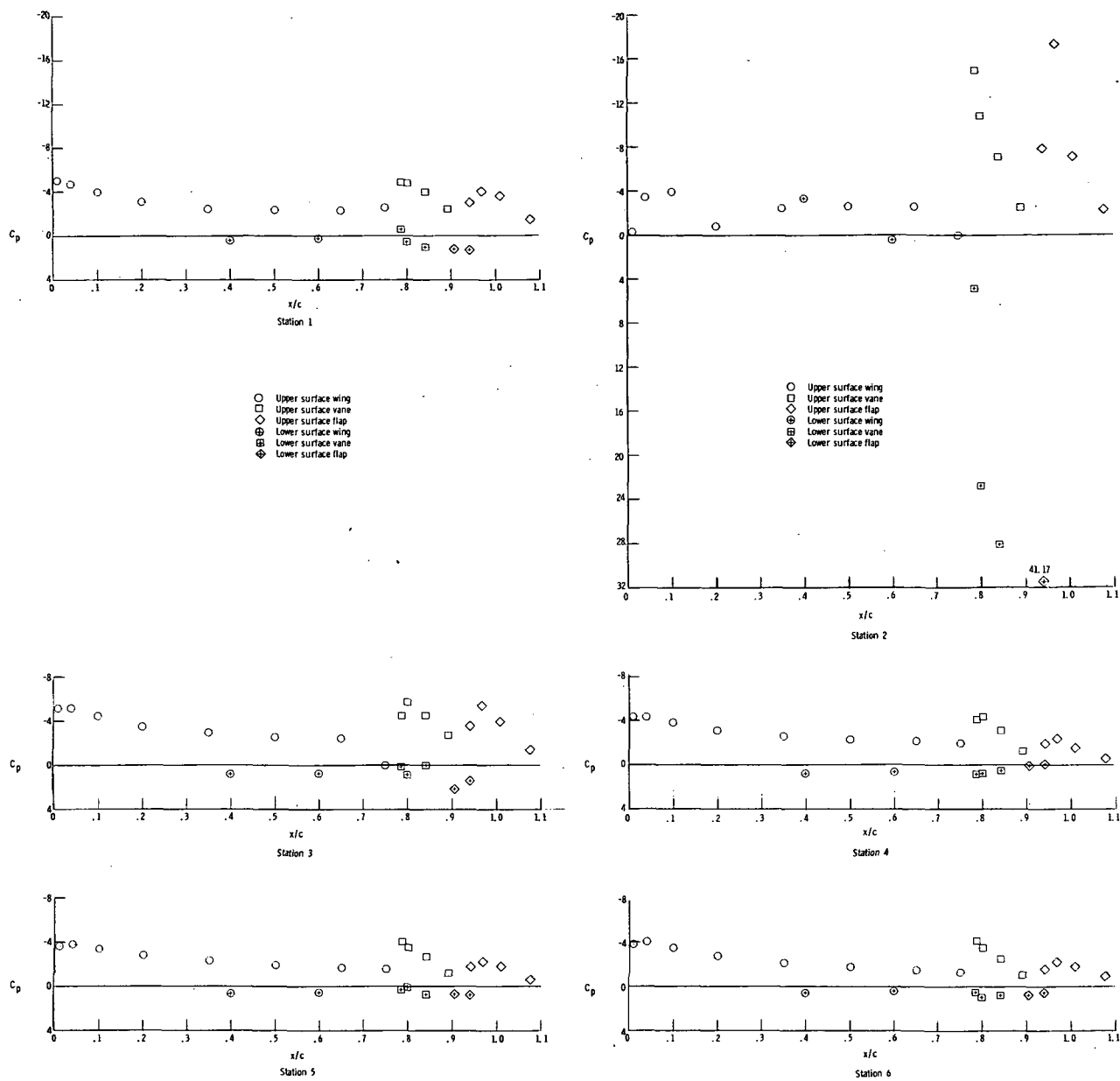


Figure 72.- Pressure distributions on wing and flap of model. Inboard engines operating. Partial-span flap.  $\delta_f = 35^\circ$ ;  $\alpha = 16^\circ$ ;  $C_{\mu} = 2.05$ ;  $A = 7$ .

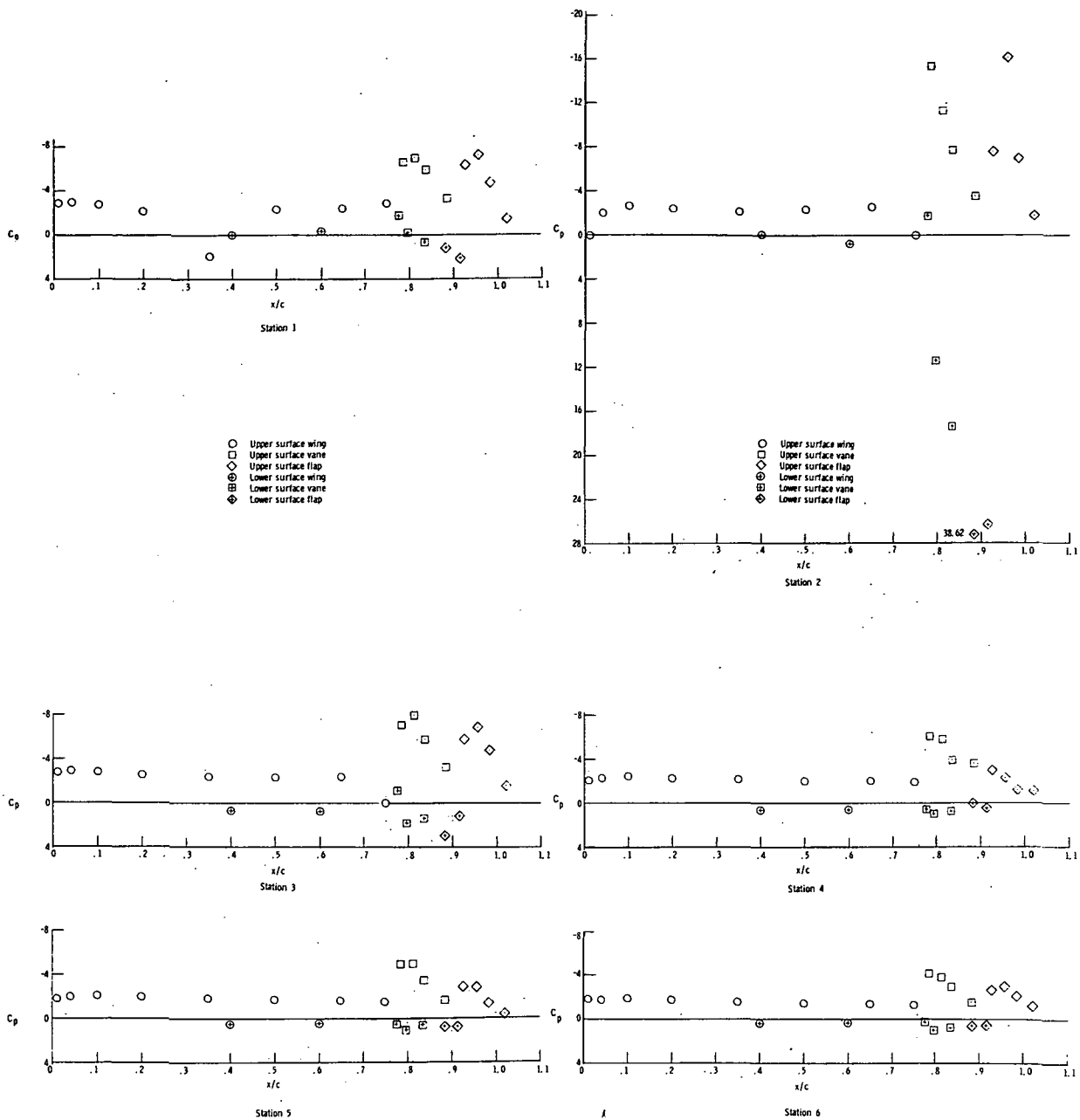


Figure 73.- Pressure distributions on wing and flap of model. Inboard engines operating.  
 Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 1.03$ ;  $A = 7$ .

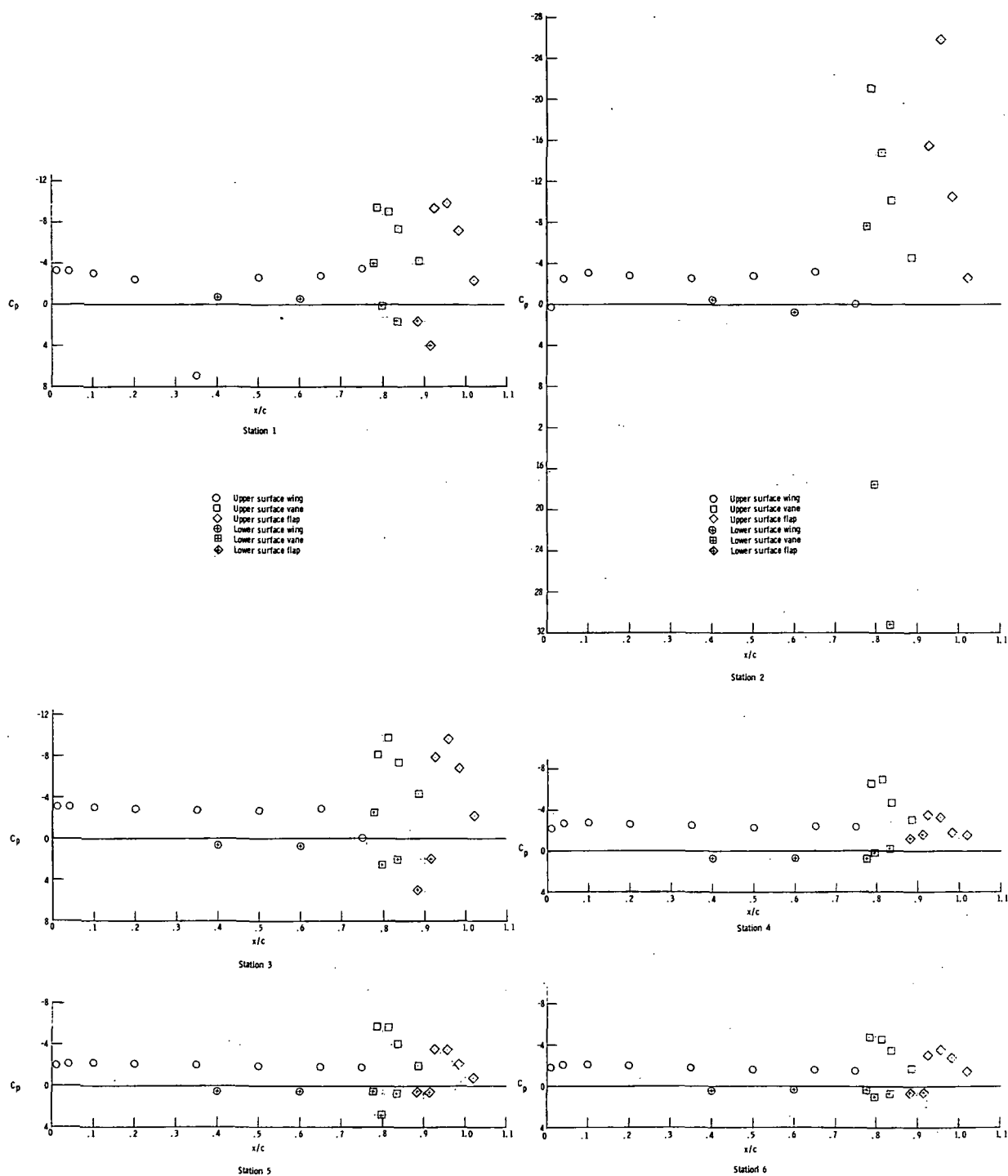


Figure 74.- Pressure distributions on wing and flap of model. Inboard engines operating. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 2.05$ ;  $A = 7$ .

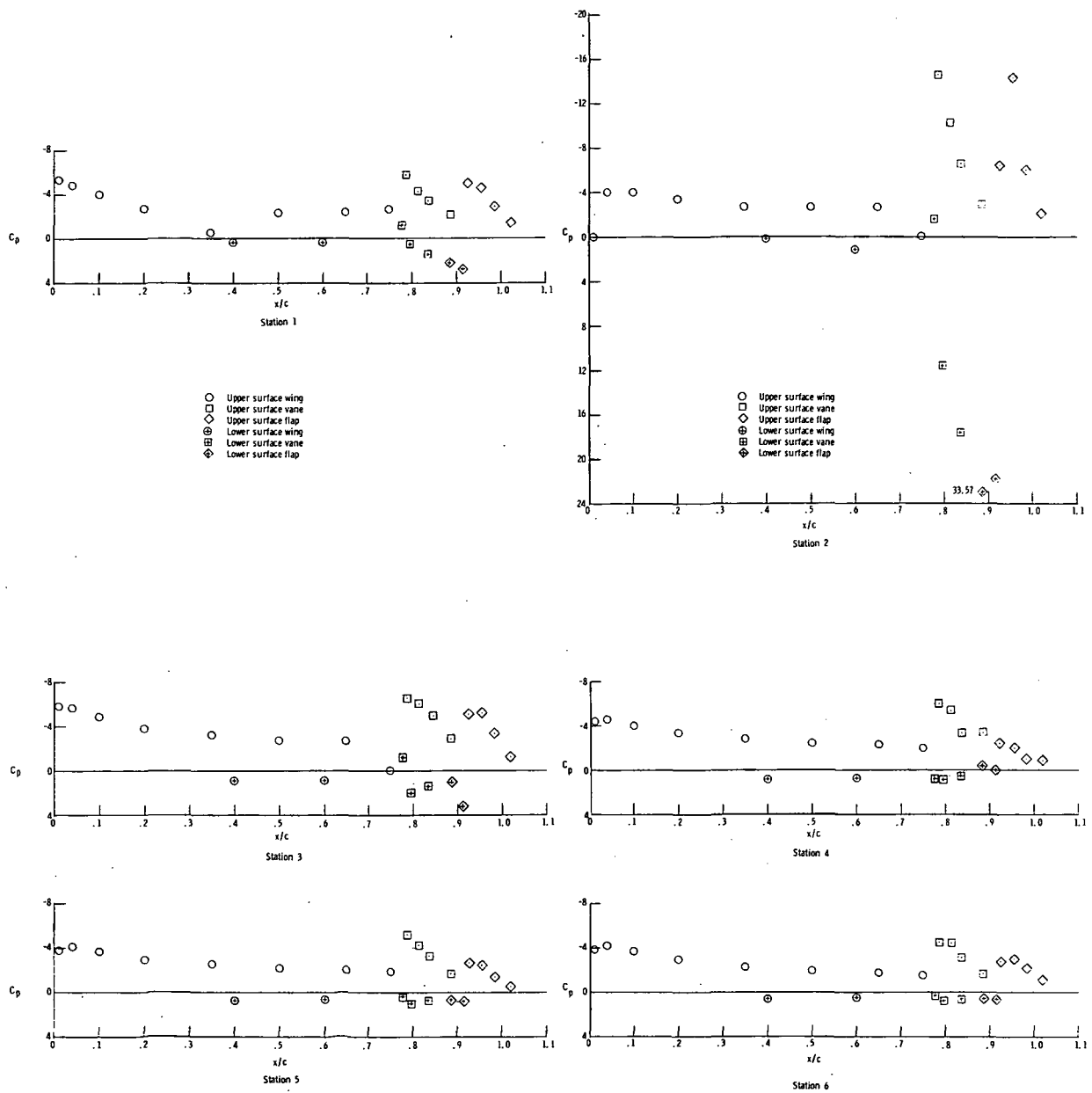


Figure 75.- Pressure distributions on wing and flap of model. Inboard engines operating. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 1.03$ ;  $A = 7$ .



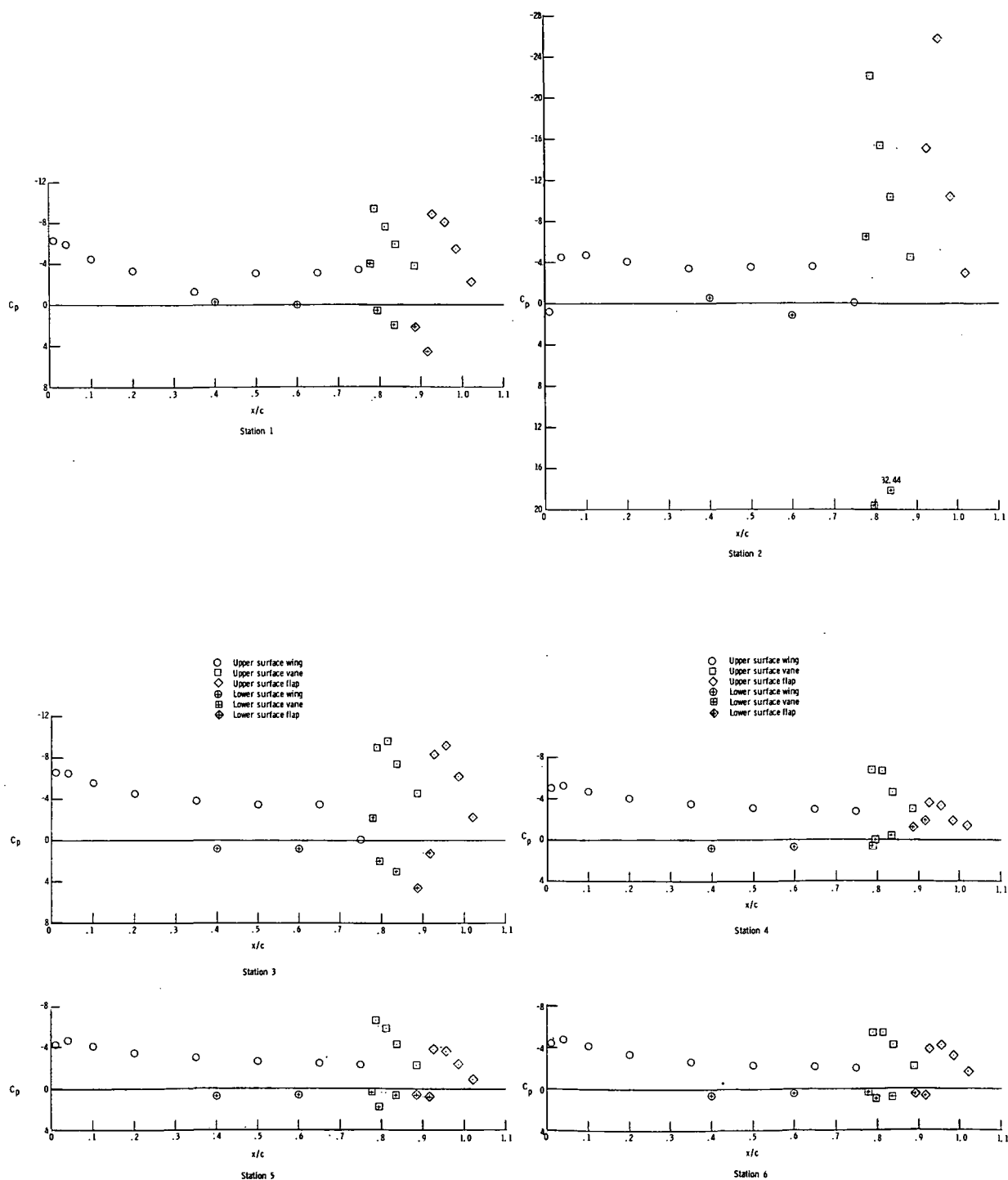


Figure 76.- Pressure distributions on wing and flap of model. Inboard engines operating. Partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_{\mu} = 2.05$ ;  $A = 7$ .

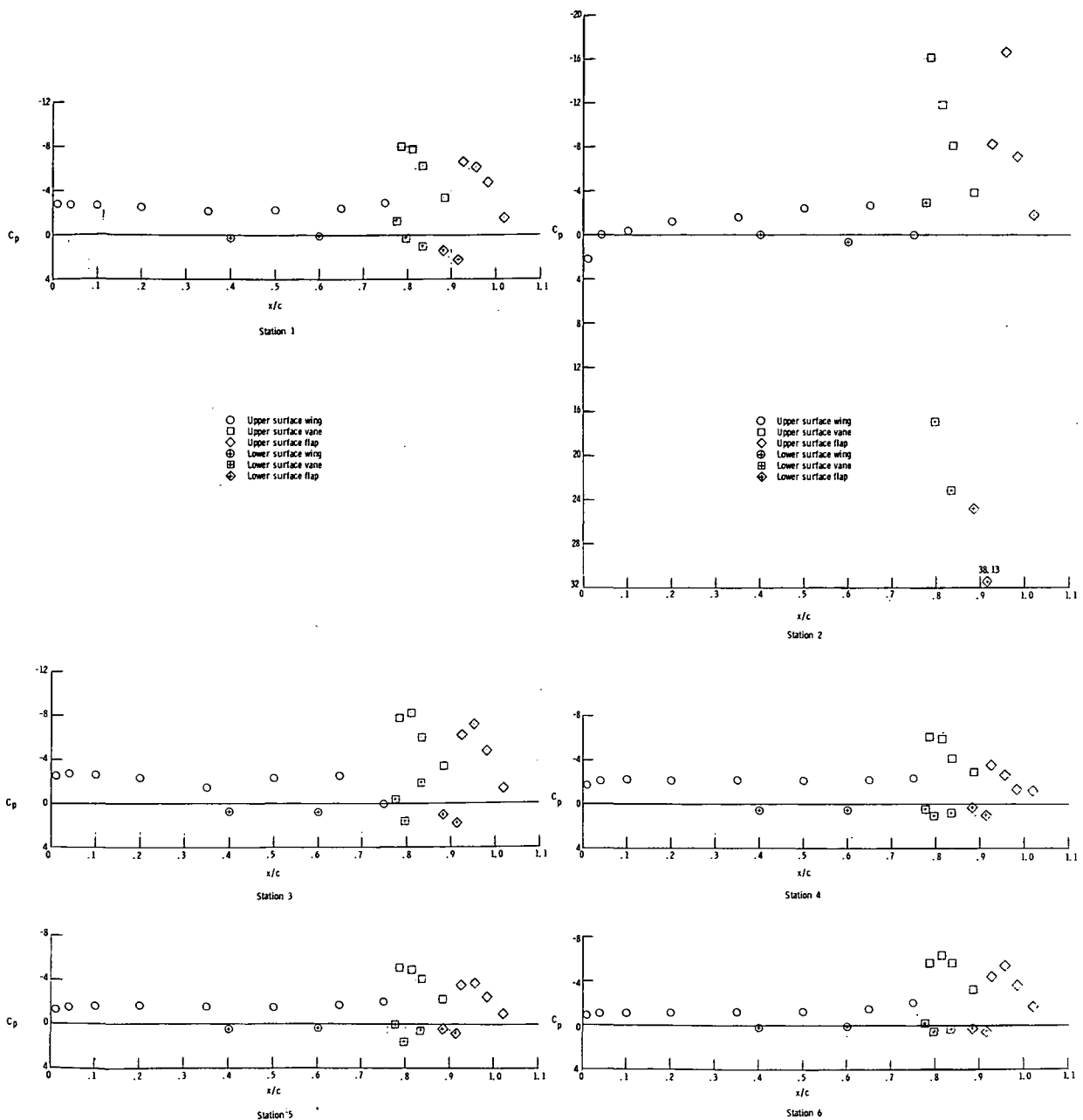


Figure 77.- Pressure distributions on wing and flap of model. Inboard engines operating. Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 1.38$ ;  $A = 5.25$ .

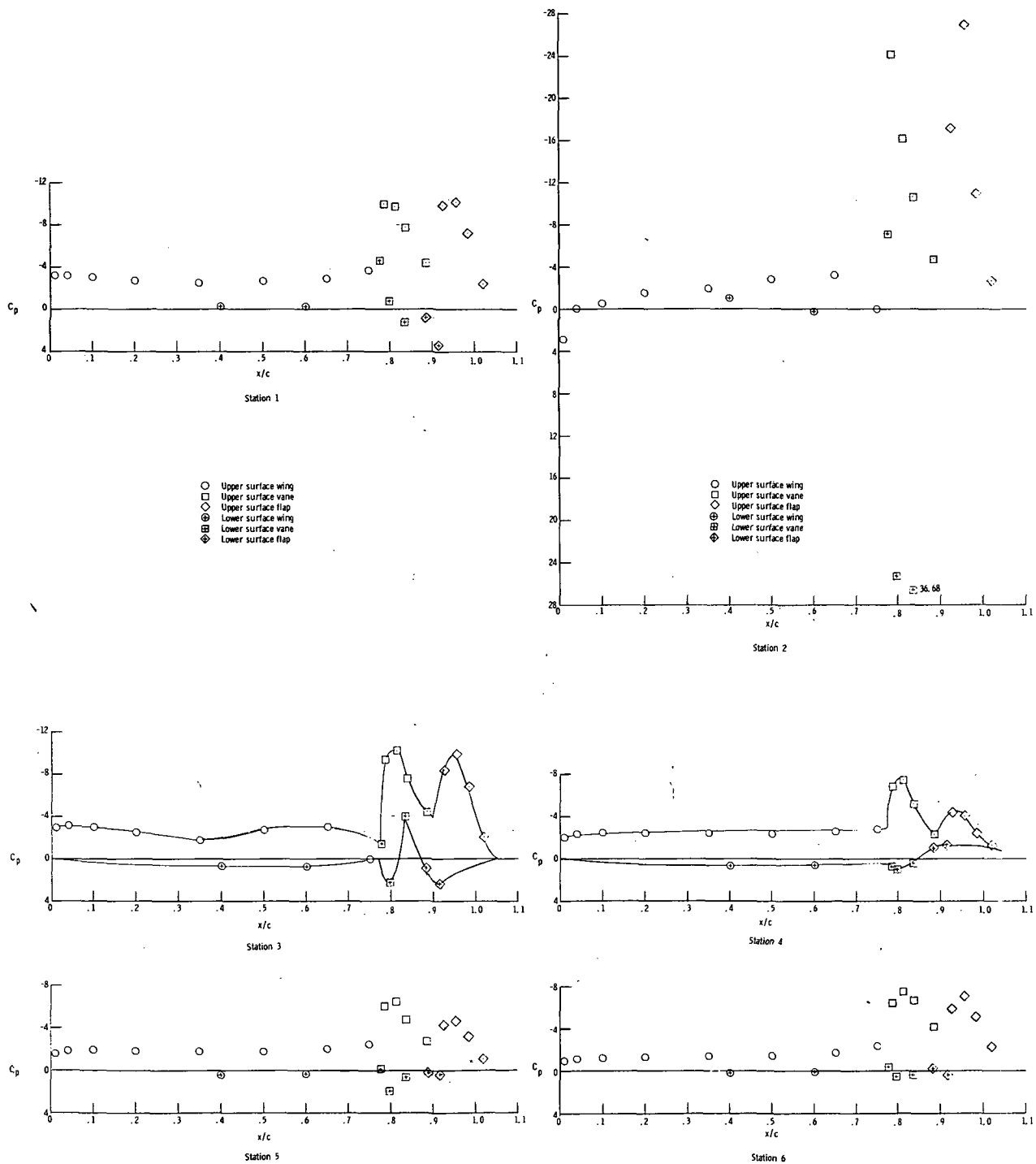


Figure 78.- Pressure distributions on wing and flap of model. Inboard engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_\mu = 2.75$ ;  $A = 5.25$ .

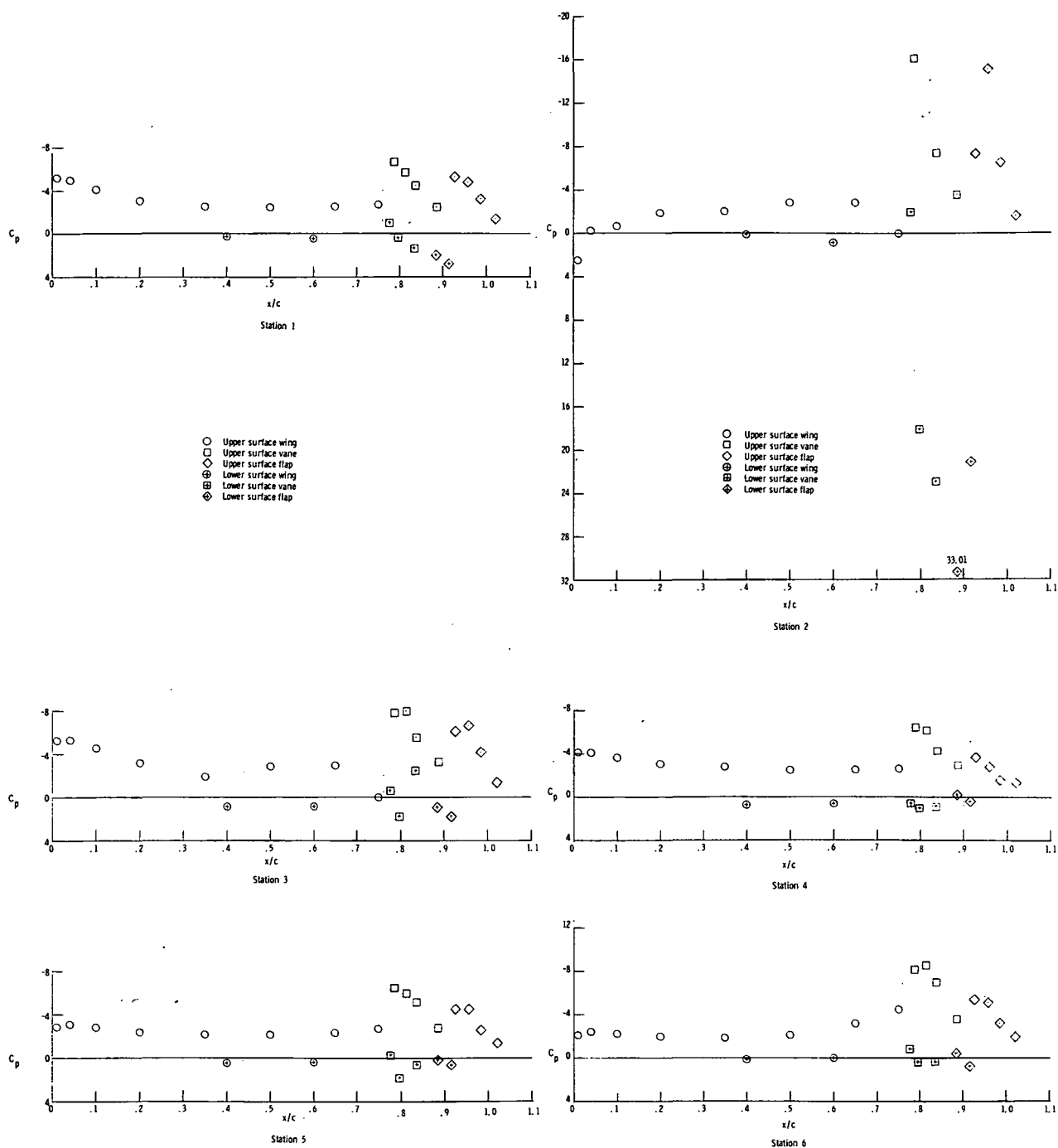


Figure 79.- Pressure distributions on wing and flap of model. Inboard engines operating. Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 1.38$ ;  $A = 5.25$ .

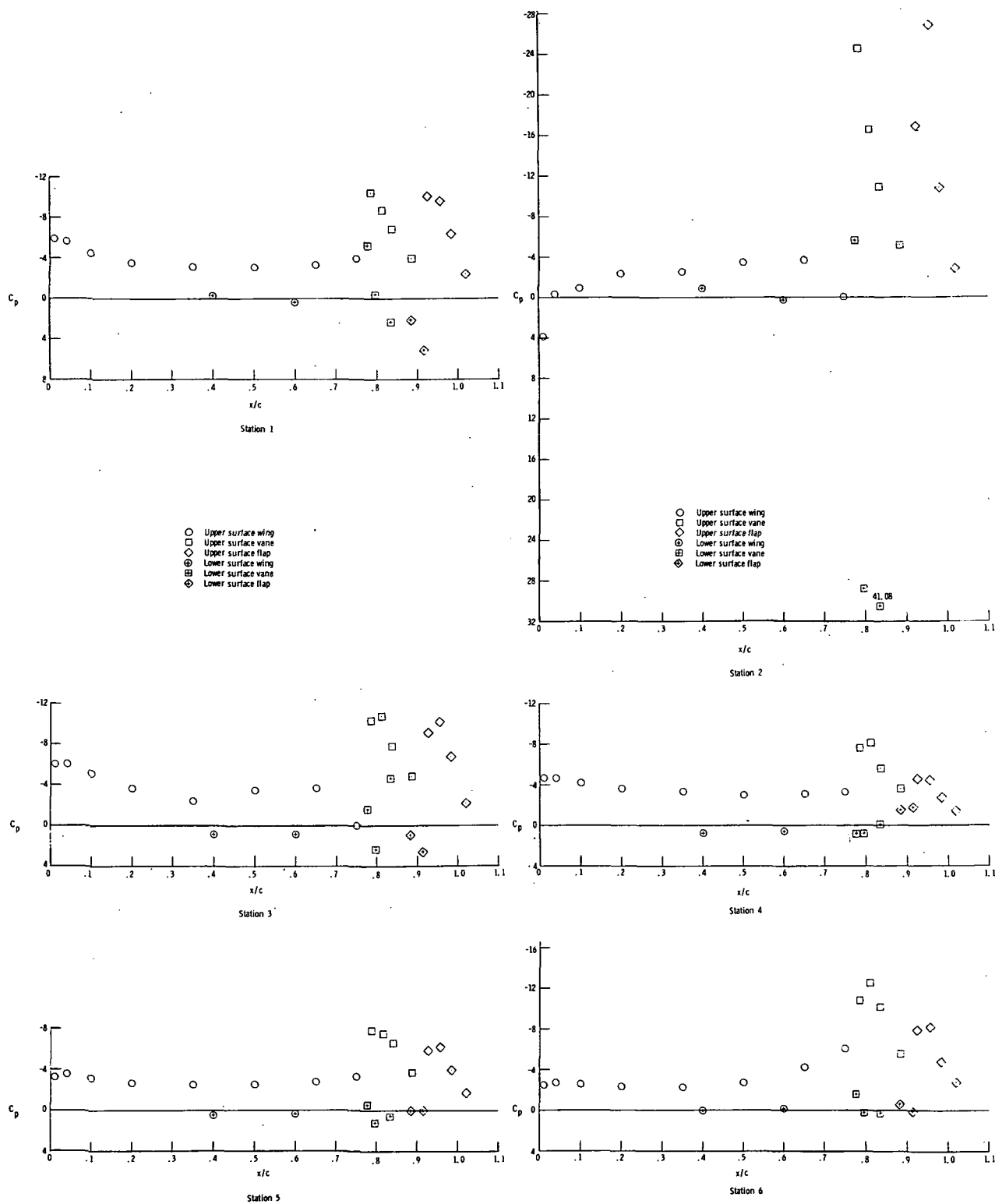
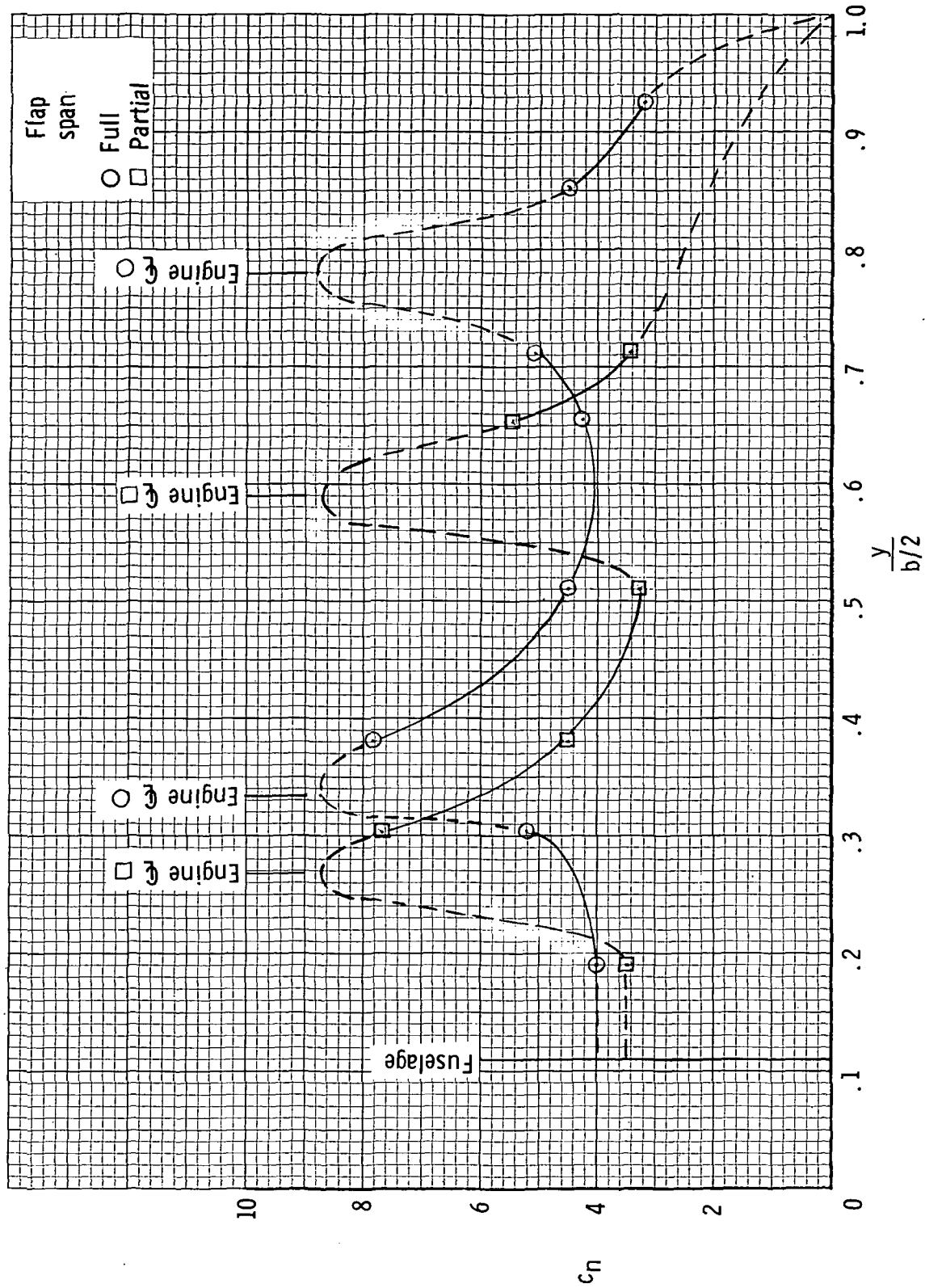
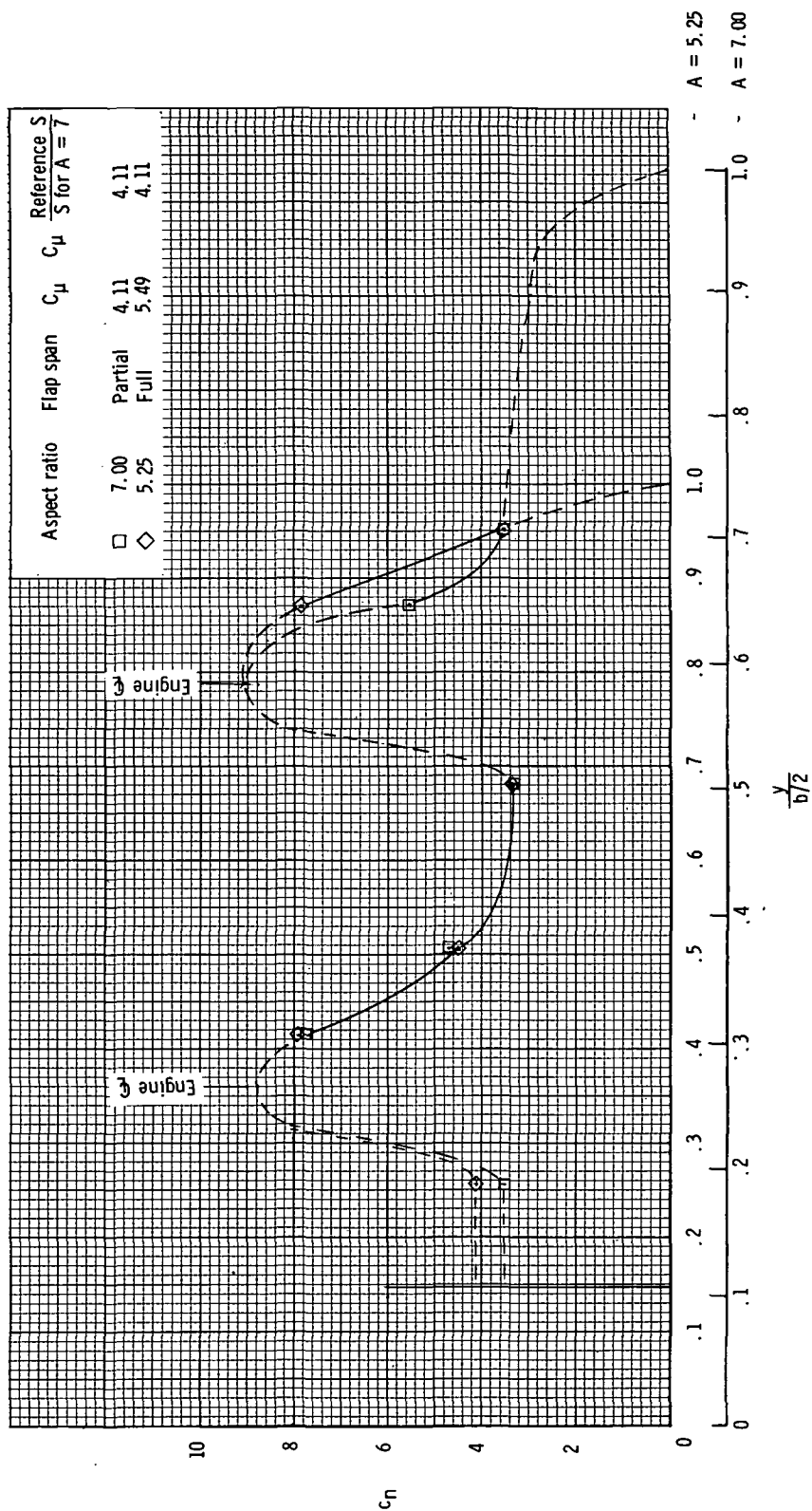


Figure 80.- Pressure distributions on wing and flap of model. Inboard engines operating.  
Full-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 16^\circ$ ;  $C_\mu = 2.75$ ;  $A = 5.25$ .



(a)  $A = 7$ ;  $C_\mu = 4.11$ .

Figure 81.- Typical spanwise load distribution for the model with all engines operating.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ .



(b)  $A = 5.25$ ; full-span flap;  $A = 7$ ; partial-span flap.

Figure 81. - Concluded.

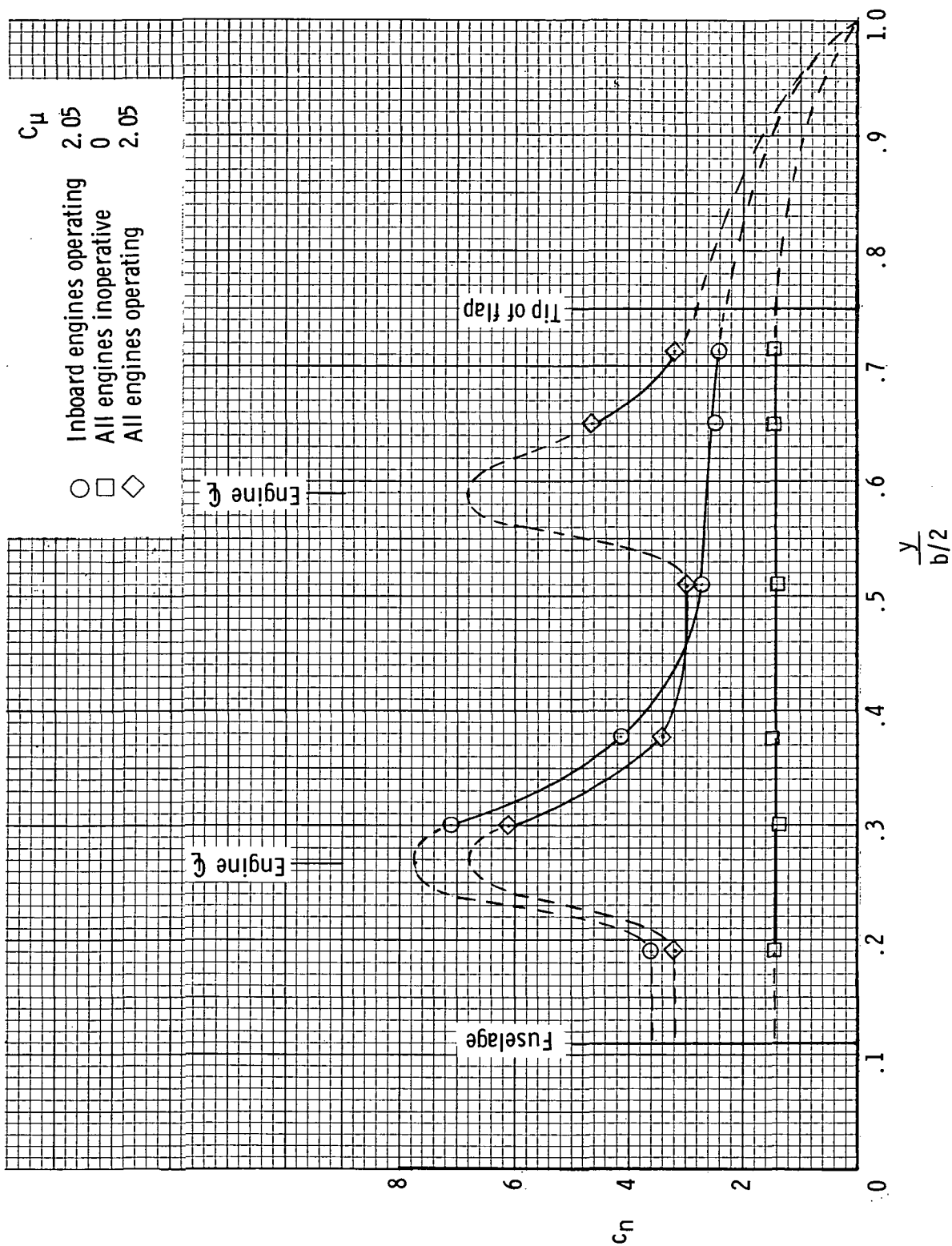


Figure 82. - Typical spanwise load distribution for the model with two engines close inboard and four engines spread out. Partial-span flap;  $A = 7$ ;  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ .



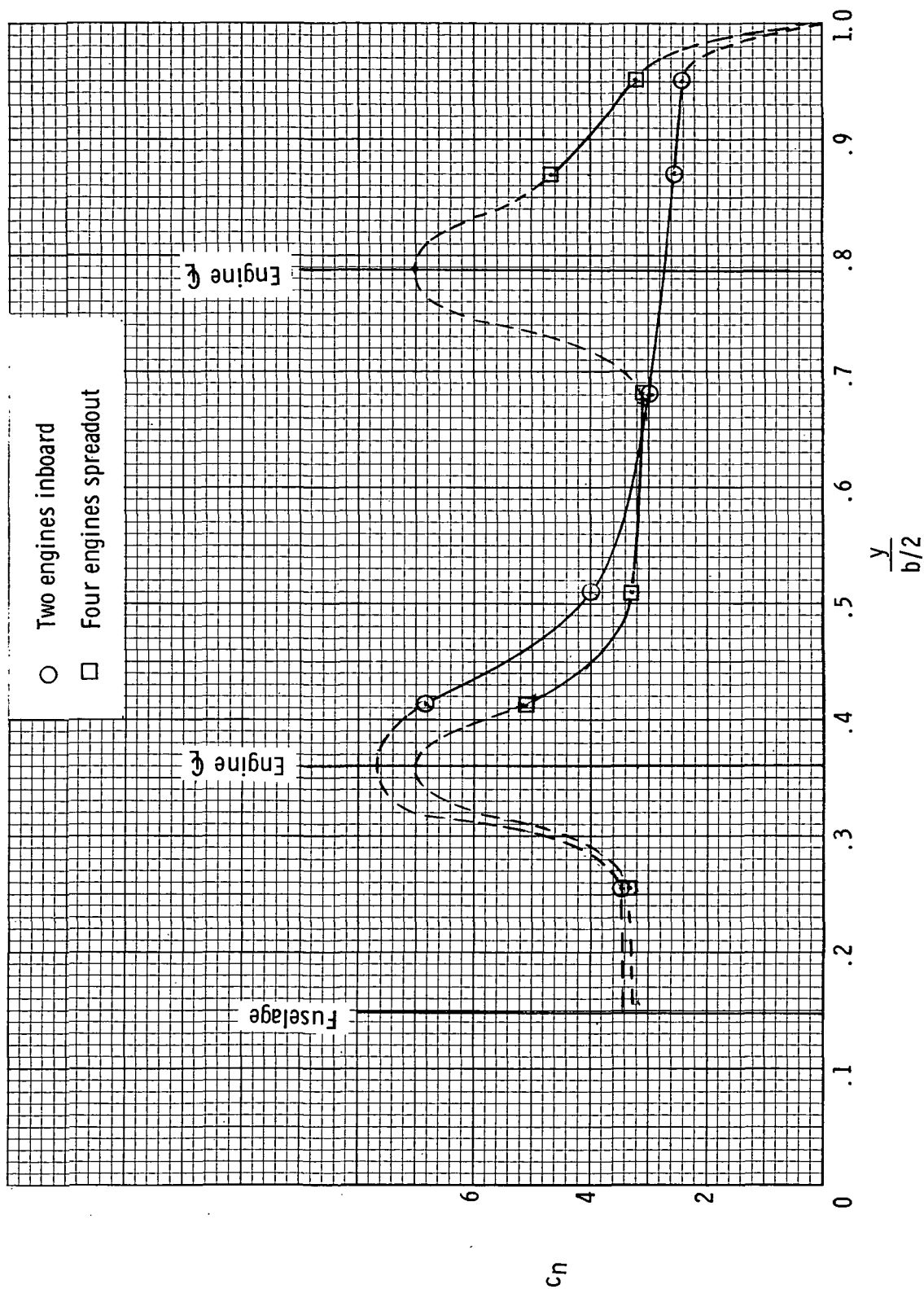


Figure 83. - Typical spanwise load distribution for the model with two engines close inboard and four engines spread out. Full-span flap;  $A = 5.25$ ;  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ ;  $C_{\mu} = 2.75$ .

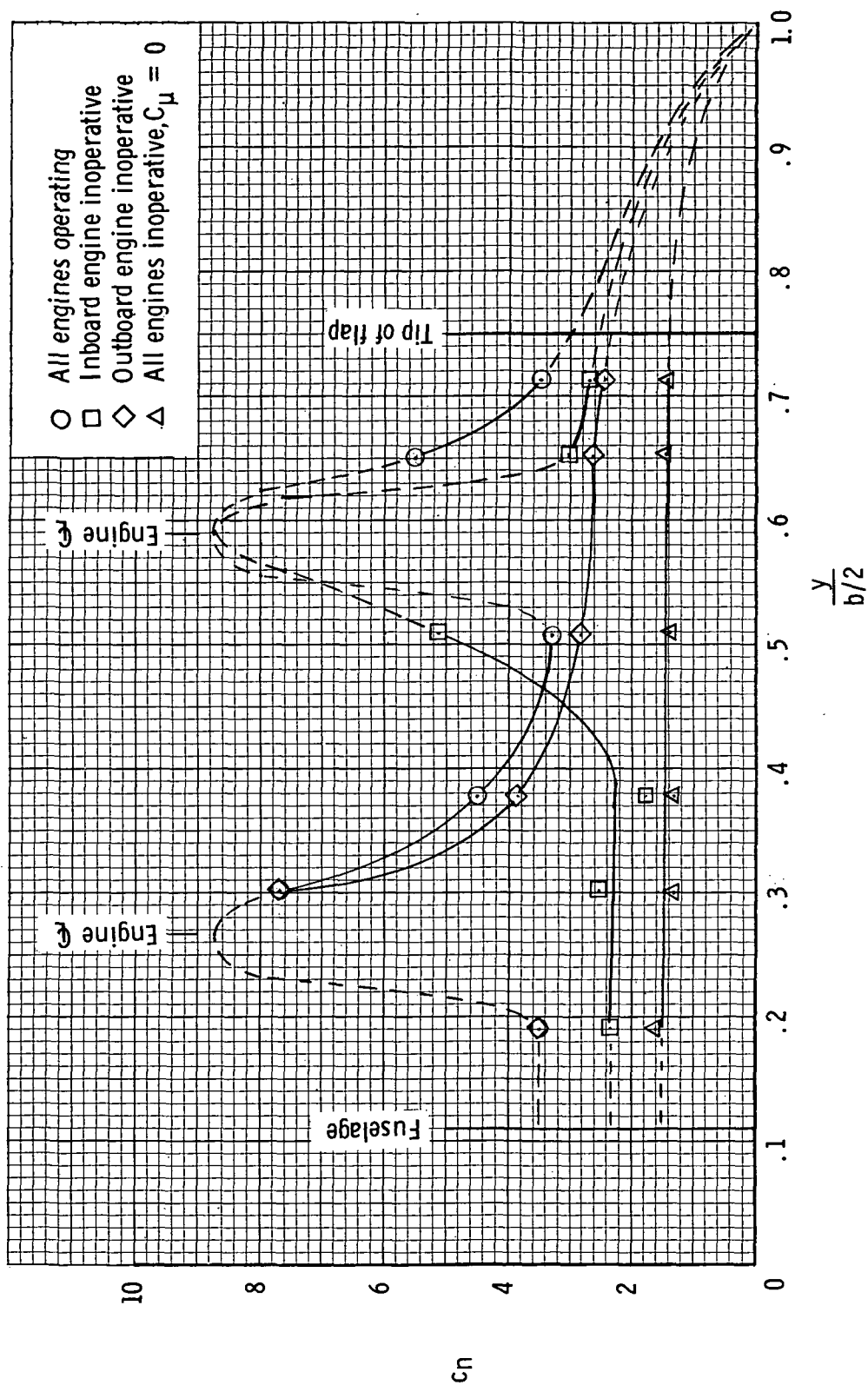


Figure 84. - Typical spanwise load distribution for the model with an engine inoperative on a wing having an aspect ratio of 7 and a partial-span flap.  $\delta_f = 55^\circ$ ;  $\alpha = 1^\circ$ .



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